

Host Universities, the Centres and their Acronyms

- Ahmadu Bello University (ABU), Zaria, Centre of Excellence in Neglected Tropical Diseases and Forensic Biotechnology (**ACENTDFB**)
- African University of Science & Technology (AUST), Abuja, Pan African Materials Institute (**PAMI**)
- Bayero University, Kano (BUK) Africa Centre for Dry-land Agriculture (**CDA**)
- Benue State University (BSU), Makurdi, Africa Centre of Excellence for Food Technology and Research (**CEFTER**)
- Federal University of Agriculture, Abeokuta (FUNAAB), Centre for Agricultural Development and Sustainable Environment (**CEADESE**)
- Obafemi Awolowo University (OAU), Ile-Ife, ICT-Driven Knowledge Park (**OAK-Park**)
- Redeemer’s University (RUN), Ede, Osun State, Africa Centre of Excellence for Genomics of Infectious Diseases (**ACEGID**)
- University of Benin (UNIBEN), Centre of Excellence in Reproductive Health and Innovation (**CERHI**)
- University of Jos (UNIJOS), Africa Centre of Excellence in Phytomedicine Research & Development (**ACE-PRD**)
- University of Port-Harcourt (UNIPORT), Africa Centre of Excellence for Oil Field Chemicals (**CEFOR**)



Participants and guests at the 7th ACE Regional Workshop, held in Lagos

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Nuggets of Excellence

● With 8,000 students enrolled and \$18 million in external revenue generated so far, weak industry relations and absence of regional policy making, Africa Centres of Excellence converge on Lagos to share their gains and pains at the 7th Regional Workshop.

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● Stakeholders present scorecard at 10th Project Steering Committee meeting.

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● The Agriculture ACEs in Nigeria are setting the pace in collaboration, which other Centres have been called upon to emulate

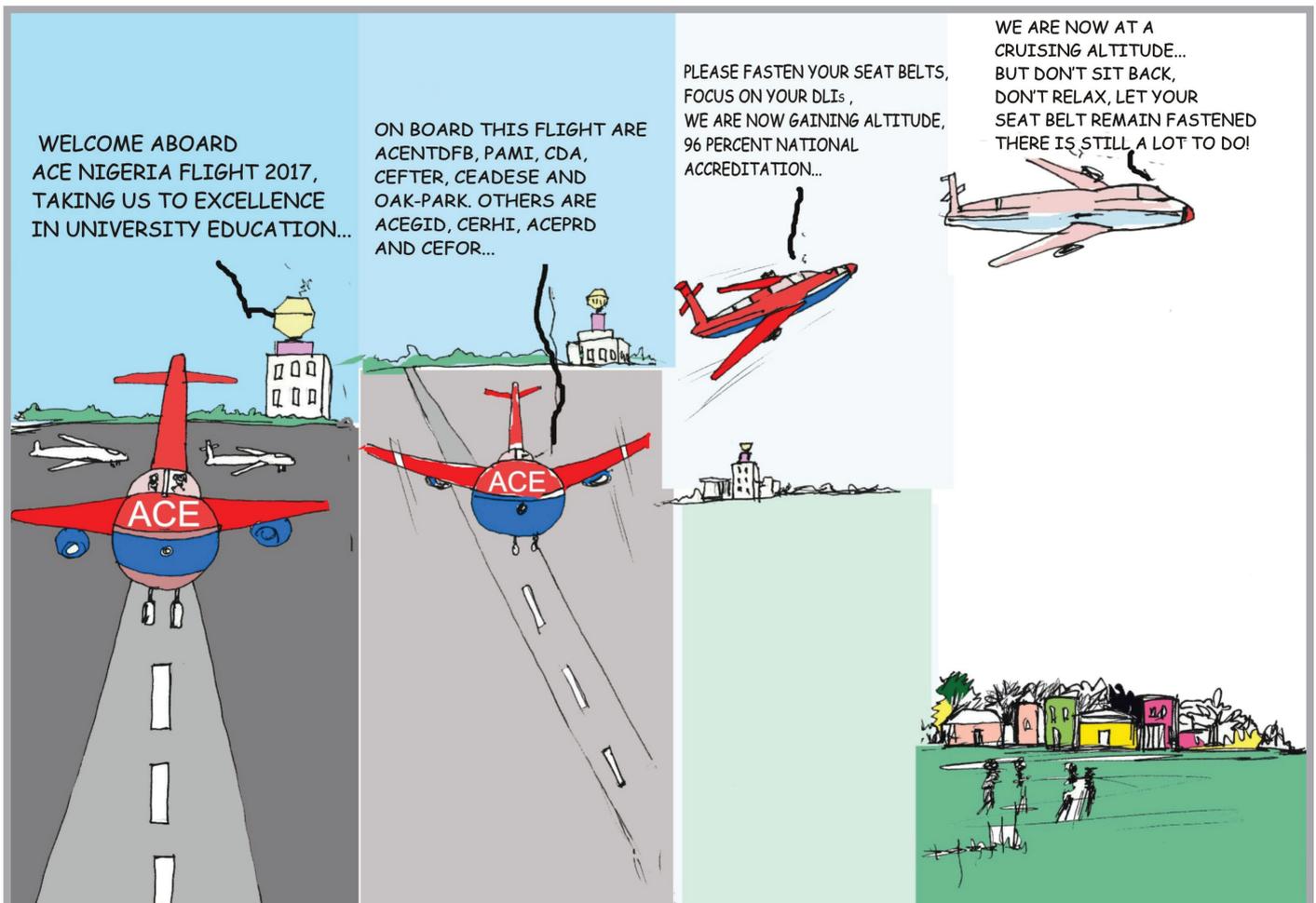
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● With more than 96 percent of programmes presented by Nigerian ACEs nationally accredited, the Centres are well on their way to achieving international accreditation, a major Disbursement Linked Indicator (DLI) of the Project.

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● ACENTDFB makes progress in its quest to develop and produce vaccines for the prevention of neglected tropical diseases, with the discovery of a new specie of Trypanosome.

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From the Publisher

Centres of Excellence Now on Cruising Altitude



What started as a dream in 2013 is now a reality. The Africa Centres of Excellence (ACE) project is a reality and a success story that we can all be proud of, going by the first-hand reports that we have obtained from them. Seven out of the 10 Centres in Nigeria have, so far, been visited by a combined team of the World Bank, Association of African Universities (AAU) and the National Universities Commission (NUC), while the remaining three are being visited as you read this.

As was rightly observed at the just-concluded Seventh Regional ACE Project Workshop, in Lagos, the Centres have overcome their teething problems and are at a cruising altitude, soaring higher towards enduring excellence.

We have, indeed, made progress in many areas. This edition focuses on some of them. It is noteworthy that NUC concluded its three-in-one accreditation/resource verification/programme audit exercises in the 10 ACEs in March. A total of 79 out of 82 programmes (more than percent) were found to be in good standing and have been duly accredited. This is

no mean feat. A combination of hard work and determination by all parties made this to happen. The next hurdle for the Centres is international accreditation, the process of which is already underway in some of them. NUC remains committed to supporting and partnering with the Centres in every way possible to ensure that they attain this goal.

For the first time in a long while, Nigerian universities, through the ACEs, are able to attract foreign students from the sub-region. Even though this appeared a hard nut to crack at the beginning, considering our economic and security challenges, it is heartening to note that the Centres are undaunted in their quest to attract regional students and faculty. Again, NUC is available to support and collaborate with them in this process.

Before the 10th ACE Project Steering Committee (PSC) meeting and 7th Regional Workshop, hosted by Nigeria in May 2017, in Lagos, one of the ACEs in Nigeria, the Centre for Dryland Agriculture (CDA) at the Bayero University, Kano, hosted the National Project Performance Review

Committee (NPPRC) in April.

In a move that has been described by the World Bank, as ‘worthy of emulation’ by all the ACEs, the Centres across the West African sub-region (Nigeria, Togo, Ghana and Cote d’Ivoire), whose focus is Agriculture, came together to hold a joint training workshop, hosted by one of them: the Benue State University Centre for Food Technology and Research (CEFTER), in Makurdi.

These and many more are being served you in this edition. Happy reading.

Professor Abubakar A. Rasheed, mni, MFR
Publisher/Editor-in-Chief

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Africa Centres of Excellence Soar Higher

● *As 7th Regional Workshop Holds in Lagos*

The 22 Africa Centres of Excellence (ACEs) in West and Central Africa, 10 of them in Nigeria, have continued to soar higher as the Project approaches its mid-term. The 7th Regional Workshop of the Project, which took place at the Intercontinental Hotel, Victoria Island, Lagos, from 16 – 18 May, 2017, provided a forum to present the project's key results, challenges and next steps.

Among the key results presented at the Workshop is the remarkable progress on student enrolment: No fewer than 8, 000 students are enrolled in new specialised short-term courses,

and Master and PhD programmes, up from 5, 258 in March 2016. The ACE project has substantial regional outreach, with universities in Nigeria, for the first time, attracting students from the sub-region, including the Gambia. More than 1, 900 regional students are enrolled in Centres across West Africa.

Another key result is excellence, through International Accreditation: The ACEs are leading in meeting global standards, with four Centres having established international accreditation in Engineering; at the 2iE Centre for Water and Environmental Sciences in Burkina Faso; at the

Centre for Cell Biology of Infectious Pathogens at the University of Ghana; Centre for Mathematics and ICT at the University of Gaston Berger, Senegal; and Centre for ICT at the University of Yaounde I, Cameroon.

Yet another key result is that of excellent and relevant applied research, where the ACEs are leading ground-breaking research being undertaken at African universities by African Scientists. The Africa Centres of Excellence for Genomics of Infectious Diseases, at the Redeemer's University, Ede, Osun State, where the first sample of Ebola was tested in Nigeria, published world-class re-



L-R: Secretary General, Association of African Universities (AAU), Prof. Etienne Ehile; Executive Secretary, NUC, Prof. Abubakar A. Rasheed; Minister of State for Education, Professor Anthony Anwukah; World Bank ACE 1 Task Team Lead, Mr. Andreas Blom and representative of the World Bank Country Director, Nigeria, Mr. Monthe Biyondi, at the 7th ACE Regional Workshop, held in Lagos



Minister of State for Education, Professor Anthony Anwukah, declaring the Workshop open

search on the Ebola virus in Nature Science.

The Africa Centre of Excellence in Applied Mathematics and ICT at the University of Gaston Berger in Senegal will host the headquarters of the International Laboratory for Research in Computer Science and Mathematics (LIRIMA) for the period 2015 – 2018.

Still on the list of key results is the push for University-Industry Linkages: The Project strongly supports university – industry linkages through internships, with the number of participating students growing steadily from 325 in 2014, to 386 in 2015 and 832 in 2016.

In addition to these, the ACE Project is building capacity in revenue generation for the Centres, such that externally generated revenue by the ACEs is now a total of USD18.3 million. The University of Ghana's Africa Centre for Cell Biology of Infectious Pathogens, for example, raised 5.1 million pounds from the Wellcome Trust, through a competitive fund grant, outbidding more than 50 other proposals across Africa.

The ACE Project is the first region-

al results-based higher education project, which means that it is financed, based on results achieved by each Centre. The results centre on achievement of quality and impactful education and research excellence. These results (otherwise known as Disbursement Linked Indicators) include publishing in international peer reviewed journals, quality benchmarks, including international accreditation, internship of students in industry as well as enrolling Masters and PhD students.

The Honourable Minister of State for Education (HMSE), Professor Anthony Anwukah, who declared the 7th Regional Workshop of the ACEs open, stated that the Federal Government of Nigeria would adopt the World Bank's Disbursement-Linked Indicator (DLI) model in rewarding excellence in the Nigerian University System (NUS).

Professor Anwukah noted that the government of Nigeria, through the ACE experience, was revolutionising higher education in terms of research and postgraduate training. As a result, the government was scaling up the Project, to accommodate more institutions as well as introduce more DLIs.

As a result of their participation in the World Bank-funded ACE Project, many ACEs are currently attracting partnerships and additional funding from development partners. These include:

- Centre for Dryland Agriculture, Bayero University, Kano – MacArthur Foundation.
 - West African Centre for Cell Biology of Infectious Pathogens, University of Ghana – The Wellcome Trust.
 - Centre for Genomics of Infectious Diseases, Redeemer's University, Ede – United States Centre for Disease Control and Prevention.
 - Centre for Mining, Institut National Polytechnique Felix Houphouet-Boigny, Cote d'Ivoire – Agence Francaise de Developpement (AFD).
 - Centre for Information and Communication Technologies, Cameroon – AFD.
 - Centre for Climate Change, Universite Felix Houphouet Boigny, Cote d-Ivoire – BMZ, Germany.
 - Pan African Materials Institute, African University of Science and Technology, Abuja – Africa Development Bank.
 - Centre for Education and Research in Water, Energy and Environment Sciences, 2iE, Burkina Faso – Africa Development Bank.
- However, the Centres still have a lot to do, some of which are:
- Developing stronger industry relations to enhance the transfer of knowledge and technology,
 - Developing more African talents,
 - Increasing regional students and having an international marketing and specialisation for African universities, and
 - Enhancing regional policy making and sustainable ACEs as well as a regional centre of excellence programme and scholarship programme.



Mr Andreas Blom



Prof. Etienne Ehile

The HMSE affirmed the Federal Government's pride in the ACE Project and its satisfaction with the successes recorded, so far. He re-iterated the commitment of the Federal Government, through the Federal Ministry of Education, to ensuring the sustainability of the Project beyond its initial life cycle. In his words "Working together, along with the various funding agencies, such as the Tertiary Education Trust Fund (TETFund), Petroleum Technology Development Fund (PTDF), and others, we hope to be strategic in our collaboration to sustain this project in a way that would ensure a reduction in duplication of efforts in terms of project implementation."

Professor Anwukah acknowledged the roles of the Association of African Universities (AAU) and the World Bank in ensuring the success of this project. He commended the regulatory agencies, particularly, the National Universities Commission (NUC), for their hard work and commitment to the project. The Minister of State also commended all the Centres of Excellence, the Vice-Chancellors of the

host universities, as well as principal officers and staff of the ACEs present. He urged the ACEs to collaborate with one another and explore means of sustaining the ACE project beyond the World Bank intervention.

In his remarks, the World Bank Country Director for Nigeria, Dr. Rachid Benmessaoud, affirmed the importance of the Bank's support to the ACEs, which seeks to lay the right long-term foundation for skills development and capacity building in Africa. He noted that the ACE project was an important one, and was gaining high level attention from development partners, industries and other stakeholders. The recent visit to CERSA (the Centre of Excellence in Poultry Science at the University of Togo, in Lome), by the World Bank Vice-President for Africa, Mr. Makhtar Diop, was a clear illustration of the importance given to the Project by the Bank's management.

Dr. Benmessaoud informed participants that, in recognition of the efforts and success recorded with the ACE

Project, the World Bank was actively considering options to scale it up and, over the coming months, would be reaching out to the governments of participating countries, to discuss options for same.

Dr. Benmessaoud thanked the Federal Government of Nigeria and the AAU for hosting the Workshop and congratulated all the Centres for a successful implementation of the ACE project.

Welcoming the delegates to Nigeria, Executive Secretary of NUC, Professor Abubakar A. Rasheed, stated that the concept of ACE, like most great ideas in the world, started as a dream. Some years ago, he said, the World Bank, represented by the its Task Team Lead for Education, Mr. Andreas Blom, conceived the dream to stimulate serious research in Science and Technology, Engineering and Mathematics (STEM), Agriculture and Health, in sub-Saharan Africa and raise a critical mass of persons who would solve Africa's mounting developmental challenges. "Today, the Project is

marking its mid-term review”, he said, and commended all those who had contributed to the realisation of the dream.

Professor Rasheed re-iterated the commitment of the government of Nigeria, through NUC, to the process that would enable the nation to achieve the aims of the Project. He informed participants that the Commission visited a number of the Nigerian ACEs to garner first-hand knowledge of their activities and was not disappointed by its findings. He added that efforts would be made to visit the remaining Centres before the end of the year. The AAU and World Bank were also carrying out joint supervision missions with the NUC, to the Nigerian ACEs, to ensure adherence to Project guidelines as well as the success of the Project.

The Executive Secretary announced that NUC had concluded resource verification, national accreditation, and programme audit exercises for the Nigerian ACEs. He expressed the

desire to see the Centres and the NUS working in close partnership with research institutes, to address the nation’s development challenges. The NUC, Professor Rasheed said, would be working closely with the Ministry of Science and Technology as well as relevant stakeholders, to ensure the achievement of project goals.

Professor Rasheed informed participants that, as part of efforts to increase awareness and disseminate information on the ACE project, the maiden edition of the quarterly journal for the Nigerian ACEs had been published, and work was on-going on the second edition as well as a documentary.

The Executive Secretary thanked the Federal Ministry of Education for its interest in the success of the project. He commended the World Bank team, particularly Mr. Andreas Blom, Ms. Himdat Bayusuf and Ms. Aisha Garba, for their efforts at ensuring that the Project is conducted in a transparent manner. He also expressed appreciation to the subject

matter specialists, such as Professor Raphael Wahome, Dr. Michelle Niescierenko, Professor Hadiza Galadanci, Professor Mamoudu Diallo and Gen. Xavier Michel for their commitment to the Project.

In his remarks, the Secretary-General of the AAU, Professor Etienne Ehile, said that the Workshop, which was preceded by the 10th meeting of the Project Steering Committee (PSC), was aimed at taking stock of achievements in the Centres, since the Abidjan workshop, in November, 2016.

Professor Ehile noted that while some ACEs had excelled and were leading the Project, some, unfortunately, were still struggling, largely due to implementation challenges, such as governance. This, he said, could only be solved at the national level, since the AAU could not interfere with every country’s processes. He enjoined the struggling ACEs to hold discussions with their governments, to explore means of resolving lingering issues, to ensure the success of the Project.



L-R: World Bank Health Specialist, Prof Hadiza Galadanci; World Bank Co-Task Team Lead, Ms. Aisha Garba; Mrs Ekua Bentil and World Bank Communications Officer, Mrs Olufunke Olufon, at the PSC meeting

The 7th ACE Regional Workshop in pictures



Delegates from Burkina Faso



Prof. Oluseyi Oluwatosin (right) and Kayode Akinyemi of the FUNAAB Delegation



Project Coordinator, Dr. Joshua Atah (6th right) with members of the ACE Secretariat at NUC



Centre Leader, ACEPRD, Prof. John Aguiyi (left), with NUC, Director, Establishment of Private Universities, Mal. Abdullahi Hamza.



Ghanian delegation



World Bank Health Expert, Dr. Michelle Niescierenko

Stakeholders Present ACE Scorecard at PSC Meeting



R-L: ACE 1 Task Team Lead, Mr. Andreas Blom; Executive Secretary, NUC, Prof. Abubakar A. Rasheed and Secretary-General, AAU, Prof. Etienne Ehile, at the ACE Project Steering Committee (PSC) meeting.

The beautiful city of Lagos, Nigeria, on Monday, 15 May, 2017, played host to the 10th Africa Centres of Excellence (ACE) Project Steering Committee (PSC) meeting, which took place at the Intercontinental Hotel, Victoria Island. The meeting, which the country hosted for the second time, comprised the World

Bank, the Association of African Universities (AAU) and heads of regulatory agencies of the countries participating in the project.

Welcoming members to the meeting and international guests to Nigeria, Chairman of the PSC and Executive Secretary of the National Universities Commission (NUC), Professor Abubakar Adamu Rasheed, said that the

aim of the meeting was to identify the challenges of the Project, so far, to ascertain shortcomings and explore means of moving the Project forward. He called on members to explore the ACEs' potentials to provide hope for the development of the education system in participating universities, adding that it was important to adopt measures to ensure the sustainability of

the Project, beyond the expiration of funds from the World Bank.

The Chairman reminded members that the ACEs belonged to the universities, rather than any individual and decried a situation where Centre Leaders with substantive appointments outside the Project, which deterred them from being actively involved in the day-to-day running of the Centres, refused to relinquish their positions as Centre Leaders, resulting in the mismanagement of the ACEs. He said that any university incapable of finding a replacement for the Centre Leader from within the university community was not qualified to host a Centre of Excellence.

Professor Rasheed observed that, for the Nigerian ACEs, the Project was a good opportunity to strengthen research activities, as against their focus, which was, hitherto, teaching and community development. He lamented the inability of the ACEs to transcend regional and language barriers, to form strong collaborations among one another and urged them to collaborate, not only among themselves, but also with the host universities, to explore possibilities of staff and student exchange, among other collaborations.

The Chairman expressed appreciation to all who made the ACE project a reality and those responsible for driving it. He commended the ACE 1 Task Team Lead, Mr. Andreas Blom, for his commitment to the success of the ACE Project and expressed optimism that the meeting would be conducted in a frank, open and courageous manner.

In his remarks, Secretary-General of the AAU, Professor Etienne Ehile, extended the gratitude of the AAU and World Bank to the Federal Government of Nigeria, through the NUC, for hosting the PSC and



Education Specialist, World Bank Headquarters, Washington DC, Ms. Himdat Bayusuf



Project Officer, AAU, Mrs. Adeline Addy

ACE Project Workshop for the second time. He noted that, since the last meeting of the PSC, in Abidjan, in November, 2016, significant progress had been made in project management, with activities such as the mid-term review, supervision missions to the ACEs, the

ACE governors' management help-line, among others.

Professor Ehile stated that the ACE mid-term implementation progress review had resulted in many key observations and recommendations for operational improvement being



Members of the ACE Project Steering Committee (PSC)

brought forward for discussions and decision-making. These include the revised specific Disbursement-Linked Indicators (DLIs), funds re-allocation from Centres with weak implementation strategies, improving DLI verification

process, improving funds utilisation, improving regional facilitation and coordination, etc.

Professor Ehile noted that the AAU was proud of a number of Centres, which had taken the lead and

shown strong resolve to succeed. Unfortunately, he said, some ACEs were still under-performing, due to various challenges, such as poor governance. He stated that AAU, as the Regional Facilitating Unit (RFU), remained hopeful that these



The PSC meeting in session

Centres would catch up with their counterparts, with the continued guidance of the World Bank and AAU.

ACE 1 Task Team Lead, Mr Andreas Blom, in his remarks, commended the Executive Secretary, NUC, for his energy, attention and excellent stewardship of the ACE project in Nigeria. He expressed appreciation to Professor Ehile for his dedication and for burning the midnight oil, to ensure the success of the Project. He noted that while some of the challenges of the Project had been resolved, others, such as regional student enrolment, international accreditation, faculty incentives, poor governance structure and poor utilisation of funds, remained a source of concern.

Mr. Blom noted that the Project had not achieved the desired mid-term objectives, with regard to funds disbursement. He informed the meeting that a number of ACEs

were still sitting on their funds, regardless of the time-bound nature of the Project. These Centres were not investing enough of their funds, he said, urging the defaulting Centres to accelerate the process of funds utilisation.

Mr. Blom commended the ACEs and the governments' ownership of the projects in their universities, adding that there was a joint effort by both parties, which was necessary for the solution of challenges and, in the long run, the success of the Project. He stated that the ACE Project was on the right track and was receiving significant attention from development partners and prospective partner-universities. It had also received internal support from the World Bank to scale up the Project, provided the Centres continued turning out positive results.

The Task Team Lead stated that the potentials which university educa-

tion and research bring to development are limitless. He observed the possibility of positioning the ACEs to provide universities the necessary skills to tackle development challenges in energy, health, agriculture, transport, technology and all other areas where knowledge and development is needed, among participating countries.

The meeting was also attended by the Project's subject-matter specialists: Professor Hadiza Galadanci and Dr. Michelle Niescierenko (Health); Professor Mamoudu Diallo and Gen. Xavier Michel (STEM) and Professor Raphael Wahome (Agriculture).

The meeting agreed that the next PSC meeting and Project Workshop, which would cover both ACE I and ACE II, would be held in November, 2017, in Accra, Ghana, to enable underperforming ACEs to glean from the experiences of the Centres in Ghana.



Director of Research and Academic Planning, AAU,
Prof. Jonathan Mba



Dr. Joshua Atah

Nigerian ACEs Set for International Accreditation

programmes, which had passed the resource verification exercise but did not make the accreditation exercise could be mounted in relevant Faculties of the universities-provided action was taken to remedy identified deficiencies-so as not to overburden the ACEs.

Achieving international accreditation, a major milestone for the Nigerian University System (NUS), Professor Rasheed said, would enable the ACEs to put Nigerian universities on the world map. He congratulated the Vice-Chancellors of participating universities, Centre Leaders and the NUC ACE Secretariat for the successful conduct of the national accreditation exercise and urged principal officers of the ACEs to adopt quality assurance mechanisms that would entrench excellence in the activities of their Centres.

In keeping with the project objective of promoting regional specialisation amongst universities in participating countries within the West and Central African sub-region, to address common regional development challenges and strengthen their capacities to deliver high quality training and applied research, the programmes being offered by the 10 ACEs include, but are not limited to MSc. Intelligent Systems Engineering, MSc. and PhD Molecular Biology and Genomics, MSc. and PhD Pharmacognosy, MSc. Food Chemistry, MSc. Food Physics, Master of Food Supply Economics, MSc. and PhD Post Harvest Physiology and Management of Crops as well as MSc. and PhD Materials Science and Engineering.

Others are MSc. Gas Refining and Petrochemical Engineering; PhD Petroleum and Gas Engineering, M. Ag.SE and Ph.D. Ag.SE Food Processing and Value Addition; MSc. and PhD Crop and Pasture Production and Sustainable Environment,



Chairman, NPPRC, Prof. Abubakar A. Rasheed



Project Coordinator, Dr. Joshua Atah

All 10 Nigerian Africa Centres of Excellence (ACEs) have set machinery in motion for the attainment of international accreditation of their programmes, a major Disbursement-Linked Indicator (DLI) of the World Bank-assisted ACE project. This follows the accreditation of more than 96 per cent of the programmes of the ACEs by the National Universities Commission (NUC). This national accreditation is another DLI of the Project.

Announcing the results of the accreditation exercise during the 4th meeting of the National Project Performance Review Committee (NPPRC), which took place on 20 April, 2017, at the Africa Centre of

Excellence in Dryland Agriculture (CDA), Bayero University, Kano, the Executive Secretary, NUC and Chairman of the NPPRC, Professor Abubakar A. Rasheed, stated that, out of 82 programmes that were presented by the ACEs for accreditation, only three failed. He noted that failing the three programmes was not a punitive measure but, rather, to ensure that only programmes which were sustainable beyond the expiration of funds from the World Bank were approved to be run by the Centres.

The Chairman reminded the Centres that they were expected to pursue excellence, while focusing on few areas. He encouraged them to set limited and attainable targets for themselves and advised that other

MSc. and PhD Livelihoods and Natural Resource Economics, MSc. and PhD Crop and Cropping System in Drylands Agriculture, PGD Forensic Biotechnology, MSc. and PhD Biotechnology, PGD, MSc. and PhD Reproductive Health Economics, Master of Public Health (Reproductive Health) and PhD Public Health, among others.

Professor Rasheed noted that the aim of the NPPRC meeting was to review the progress of the Project as well as address issues germane to its success, such as the need to promote collaboration among ACEs within similar fields, prior to partnerships with foreign universities. These collaborations would enable Centre Leaders to share resources among one another and equip them to win future grants.

The Executive Secretary encouraged the Universities to cultivate the habit of funding the Centres and devise means of incentivising faculty within the ACEs. He reminded

members of the World Bank's position that the Centres would not be allowed to pay bonuses to staff from the grant. He noted that the impact of the ACE project on Nigerian universities would be evident in the long-run and encouraged staff not to view incentives in monetary terms, as it could be detrimental to the progress of the Project.

The Chairman lamented the lack of interest of research institutes in the activities of the Centres, despite government's huge investments in them and the relevance of the ACEs to the research institutes. He informed members that a meeting would be convened by the Ministry of Science and Technology, for the heads of research institutes and the Nigerian University System (NUS), with NUC representing the Universities, to explore means of supporting research activities in Nigerian universities, particularly the ACEs.

Delivering a report on the progress of the ACEs, the National Project

Coordinator, Dr. Joshua Atah, highlighted the challenges of the ACEs, such as the lack of incentives for faculty involved in the Project and difficulty in attracting regional students, especially females. Other challenges include securing placements for students' internships and the lack of interest of research institutes in the activities of the Centres.

Joining the meeting via Webex, World Bank Education Specialist, Ms. Himdat Bayusuf, commended the Executive Secretary's efforts at moving the Project forward, which was evident in the appreciable progress recorded by a majority of the Nigerian ACEs. She said that she was delighted at the Vice-Chancellors and Centre Leaders' ownership of the Projects in their various universities, noting that most of the performing Centres were those who were being supported by their university management. Ms. Bayusuf urged the ACEs to, not only learn from each other's experiences, but also, leverage on each other's



Members of the NPPRC and NUC ACE Secretariat, after the 4th NPPRC meeting, held at the Centre for Dryland Agriculture (CDA), Bayero University, Kano



The Deputy Director, Research and Outreach, Dr. Kabir Mustapha (second right), explaining a research process at the Tissue Culture Laboratory of the Africa Centre of Excellence for Dryland Agriculture, Bayero University, Kano, to the Executive Secretary, NUC, Prof. Abubakar Rasheed; while the Vice Chancellor, Prof. Yahuza Bello (left) listens with keen interest

strengths.

Earlier in his welcome remarks, the Vice-Chancellor, BUK, Professor Muhammad Yahuza Bello, noted that this was the first meeting of the NPPRC to be held outside Abuja. He called for a rotation of subsequent meetings of the Committee round member-institutions, to afford the Centres the opportunity to share experiences and learn from each other, thereby gleaning best practices. Professor Bello re-iterated the need for better collaboration among the ACEs which, he noted, was key to the success of the Project in Nigeria.

In a vote of thanks, the Vice-Chan-

cellor, University of Port Harcourt, Professor Ndowa E. S. Lale, commended the commitment of the Executive Secretary to the success of the ACE project. He thanked the NUC ACE Secretariat for providing the much-needed leadership and guidance to the Centres and also commended the Centre Leaders for devotedly nurturing the ACEs.

Professor Lale expressed appreciation to the Vice-Chancellor, BUK for the hospitality accorded members, adding that the University had set the standard for subsequent meetings. He applauded the Vice-Chancellor's dedication to, not only the development of CDA, but the University, as a whole. He noted that the

University had enjoyed a succession of exceptional Vice-Chancellors (including Professor Attahiru Jega and Abubakar Rasheed), which had resulted in the rapid, yet steady growth of the University.

A highlight of the meeting was a tour of the Centre for Dryland Agriculture (CDA), led by the Centre Leader, Professor Jibrin M. Jibrin. Facilities visited included the 25-seater GIS Laboratory and the Tissue Culture Laboratory, where plant cells are cultured, prior to replanting. Other facilities visited were the 100-seater Conference Room, a video-conference room, reading rooms, a central laboratory and lecture rooms.

Honour for the 'Father of ACEs in Nigeria'

No fewer than 150 participants, drawn from 22 Africa Centres of Excellence across West and Central Africa, converged on Lagos, recently, for the 10th ACE Project Steering Committee (PSC) meeting and the 7th Regional ACE Project Workshop. The meetings were held to review the Project, identify the successes and challenges, and chart the course for the future.

One of the highlights of the Workshop, was the dinner, held in honour of the immediate past Executive Secretary of NUC, Professor

Julius A. Okojie, OON.

Described by one of the speakers at the dinner as 'the Father of ACEs in Nigeria', Professor Okojie, it was, who received the World Bank team in July, 2012, to brainstorm on Nigeria's participation in the then proposed Regional Higher Education Africa Centres of Excellence Project, targeted at universities with strong postgraduate training and research in Africa.

A lot of activities followed this initial discussion, with the World Bank undertaking a mission to Nigeria, from 5 to 7 November, 2012, to seek government's interest and

feedback on the proposed Project, discuss implementation arrangements for Nigeria, consult with and inform Nigerian universities about the Project as well as consult with other development partners.

Following the call for proposals in July 2013, NUC played a key role in sensitising and facilitating the participation of Nigerian universities, leading to their submission of a total of 51 proposals. Again, the Commission set up the machinery and supervised the process of further streamlining the proposals after which 27 were submitted for the rigorous selection exercise by the Project Steering Committee.



R-L: Vice-Chancellors of Ahmadu Bello University, Zaria, Prof. Ibrahim Garba; University of Port-Harcourt, Prof. Ndowa E.S. Lale and Redeemer's University, Ede, Prof. Debo Z. Adeyewa; presenting some gifts to the former Executive Secretary, NUC, Prof. Julius A. Okojie...



... and to Executive Secretary, Professor Abubakar A. Rasheed

The 27 represented 52.94 percent of the total proposals received and at the end of the exercise Nigeria won 10 out of the 19 Centres that were selected (The Centres have since grown to 22 across West and Central Africa). From then on, the rest is an unfolding history. Today, the Secretariat of the ACE Project in Nigeria, which coordinates the Centres, is at NUC. Significantly, NUC resolved at the beginning that the call for proposals be extended to all universities (Federal, State and Private). The results coming out of the Centres in Private and State Universities show that the decision to include them was a wise one after all. Speakers at the dinner reflected on some of the above and more.

From Professor Rasheed, who was the Vice-Chancellor of Bayero University, Kano, when its Centre for Dryland Agriculture (CDA) made the selection and has continued to give a good account of itself; to the Vice-Chancellors of Ahmadu Bello University, Zaria, Professor Ibrahim Garba; University of Port Harcourt, Professor Ndowa E. S. Lale and Redeemer's University, Ede, Professor Z. Debo Adeyewa as well as other

officials of the World Bank and the ACEs in Nigeria, everyone had a kind word for Professor Okojie. They thanked him for initiating the establishment of the ACEs and his contribution to the growth of university education in Nigeria, including the establishment of many private universities.

It was Professor Rasheed's night too, as the guests also had kind words for the Executive Secretary who, since his assumption of office, in August, 2016, took off from where Professor Okojie stopped and had pursued the realisation of the ACE Project objectives with vigour. His support for the Project has been total. This explained why, even after streamlining NUC's Accreditation and Resource Verification activities to hold twice and thrice a year, respectively, Professor Rasheed ensured a special time-table for the ACEs, such that the resource verification, accreditation and audit of their programmes were concluded in March, 2017. With this, all the 79 programmes that scaled the national accreditation hurdle are now set for international accreditation.

In all, the speakers thanked both the former and incumbent Executive

Secretaries for their leadership, vision, passion, focus and knowledge of the Nigerian education system, after which gifts were presented to them.

In his response, Professor Okojie, who was accompanied by his sons (Messrs. Oluwatosin and Eromosele Okojie and their spouses), thanked the organisers for honouring him. He expressed happiness at the progress being made by the Centres and urged them to give due consideration to the sustainability of the ACE Project beyond World Bank's support, recommending counterpart funding as one of the ways of ensuring this.

Also responding, Professor Rasheed, in his characteristic humility, insisted that the event was "Professor Julius A. Okojie's show" and that he would have loved to hand his own gifts over to him. His words: "we are here to honour one person and he is Professor Okojie. This is your day. We will continue to respect you. We are happy for you and proud of what you have done. We thank you for going back to the Federal University of Agriculture, Abeokuta to teach (after your tenure of office)."

Images from dinner in honour of Professor Julius A. Okojie



Prof. Julius A. Okojie



L-R: Prof. Okojie's sons, Messrs. Eromosele and Oluwatosin Okojie, with their wives, at the dinner



R-L: Prof. Rasheed, Mr. Blom, Prof. Okojie, Mr. Hamza Abdullahi and Dr Atah



Prof. Rasheed and Okojie with some officials of the World Bank



Secretaries now and then, (L-R), Prof. Ehile, Rasheed and Okojie



Deputy Centre Leader, (ACENTDFB), Prof. YKE Ibrahim

FOCUS ON THE CENTRES



Supervision and OAK-Park Teams at the Obafemi Awolowo University, Ile-Ife

World Bank Teams Visit Centres of Excellence

As part of their oversight functions, combined teams of experts and officials, drawn from the World Bank, the Association of African Universities (AAU) and the National Universities Commission (NUC) ACE Secretariat have paid supervision visits to seven out of the 10 Africa Centres of Excellence (ACE) in Nigeria.

The Centres visited were the ACE in Phytomedicine Research and Development (ACEPRD), University of Jos (UniJos); ACE on Neglected Tropical Diseases and Forensic Biotechnology (ACENTDFB), Ahmadu Bello University (ABU), Zaria; ACE in ICT-Driven Knowledge Park (OAK-Park), Obafemi-Awolowo University (OAU), Ile-Ife and the ACE for Genomics of Infectious Diseases (ACEGID), Redeemer's University, Ede.

Others were the Centre for Agricultural Development and Sustainable Environment (CEADESE), Federal University of Agriculture, Abeokuta (FUNAAB); Centre for Reproductive Health and Innovation (CERHI), University of Benin (UNI-

BEN) and the Centre for Dryland Agriculture (CDA), Bayero University, Kano (BUK).

In the teams were, Ms. Aisha Garba, from the World Bank, Nigeria Country Office, Professor Jonathan Mba, from the AAU, World Bank Consultants, Prof. Tenagne Haile-Mariam and Dr. Carl Larsen as well as four World Bank/AAU Experts. The Experts and their thematic areas of specialty were, Professor Raphael Wahome (Agriculture), Professor Mamadou Diallo (STEM), Professor Xavier Michel (STEM), Prof. Michelle Niescierenko (Health) and Professor Hadiza Galadanci (Health).

The main objective of the visit was to gather first-hand information on progress being made by the ACEs, towards achieving the general objectives of the ACE project and their Disbursement-Linked Indicators (DLIs). The teams carried out physical inspection of the facilities of the Centres and interacted with the Centres' management and their students.

The visit also afforded the teams the opportunity to interact with the Vice-Chancellors and the management of the univer-

sities to ascertain the levels of cordiality and commitment of the universities to the ACEs.

Professor Diallo, who visited the OAK-Park at OAU, Ile-Ife, encouraged the Centre to continue to reach out to neighbouring countries, in a bid to enrol more regional students and also ensure knowledge sharing, through partnerships, collaborations and co-operations with relevant partners.

The Acting Vice-Chancellor, Professor Anthony Elujoba, thanked the World Bank, AAU and NUC for their efforts at ensuring that the ACE project succeeds. He expressed willingness to support the Centre to achieve the set objectives. He also informed the visitors that he was leading the Centre's team in its drive to recruit regional students by visiting some West and Central African countries, an effort that was already yielding some results.

Professors Niescierenko and Galadanci visited CERHI at UNIBEN; ACEPRD at UniJos; ACEGID at Redeemer's and ACENTDFB, at ABU, Zaria. At UNIBEN, the Vice-Chancellor, Professor F.F.O. Orumwense, thanked the team for coming and reassured the experts of the University's continued support for the success of the ACE Project beyond its life span.

The team shared with the Vice Chancellor, some of CERHI's challenges, which,



The ACEGID Team with the Vice Chancellor, Redeemer's University, Prof. Z. Debo Adeyewa, third left and Centre Leader, Prof. Christian Happi (first right, second row)

it said, the Centre was working hard to address in order to be more stable.

Dr. Larsen and Professor Wahome visited CEADESE at FUNAAB and CDA at BUK, where the former stressed the need for visionary leadership, strong support from the University's management and support of the wider staff of the University, for the Centre to function excellently. He informed the management of BUK that the performance of the Centre was outstanding.

In all, the Centres were encouraged to fast-track the process of international

accreditation, reach out to neighbouring countries to enrol more regional students, expand their regional scope, import talents and scale up international partnerships. They should also ensure knowledge-sharing, through partnerships, collaborations and co-operations with relevant partners; connect to global knowledge and information, so as to be real time; encourage private sector involvement in the development of students, taking cognisance of the fact that the private sector is the major end user of university output; and also leverage on existing body of knowledge and research.



The Team with the ACEGID Centre Leader, Deputy Centre Leader and their students

CEADESE Holds Workshop on Agric Information Systems

The Africa Centre of Excellence in Agricultural Development and Sustainable Environment (CEADESE) of the Federal University of Agriculture, Abeokuta (FUNAAB), Ogun State, recently organised a three-day capacity building workshop on Agricultural Information Systems Development, for students of the Centre.

In a keynote speech, Project Director of CAVA II (Cassava Adding Value for Africa), Professor Kolawole Adebayo, stated that there was a large body of data available to people in agriculture and agro-allied enterprises, on topics ranging from agricultural production to processing, marketing, logistics of managing the movement of goods and services in agriculture, exportation and international trading in agriculture, extension services

as well as research. This data, which was in several distinct units, he said, needed to be processed into valuable information. He cautioned against scattering and abuse of data, to avoid sending incoherent messages.

Professor Adebayo congratulated participants for the opportunity to launch themselves into the emerging trend of modern agricultural enterprises management in an information era. He expressed pleasure at the Centre's progress in incorporating information management into agriculture, adding that the present day agricultural value chain differed significantly from traditional agricultural practices because of the central role of information. According to him, "If you are able to transact e-businesses in agriculture, you are better off than those who can only do cash busi-



Student participants at the workshop

nesses.”

Professor Adebayo described the e-wallet as an Information and Communications Technology-based mechanism, which allows farmers to acquire inputs and governments to target subsidy end users. He noted that the agricultural value chain required information to function, as the emergence of ICT in the agricultural sector had created new actors in the chain. These new actors needed to be known to individuals, not only about agriculture and agricultural practices, but also about the use of information, to maximise opportunities that agriculture offered.

Delivering a paper titled, Introduction to Information Systems Development: Application to Agriculture, Professor Olusegun Folorunso of the University's Department of Computer Science, stated that information services should be made available in all regional languages and at the farmers' doorsteps. He stressed that there should be a change in mind-set, to motivate people towards the building of a comprehensive database and information systems for the farming community.

Professor Folorunso stated that the development and implementation of proper early warning systems, advisory services, as well as the development of expert systems

on what to grow, when and where; would enhance agricultural productivity. He emphasised the need to bridge the gap between knowledge and practice, with the deployment of ICT, for sustainable use of natural resources and linkages between research, technology and production, adding that reliable and comprehensive information, should be easily accessible to everyone.

In another lecture titled, Ethical and Societal Issues in Agricultural Information Systems, Professor Folorunso described agricultural information systems as uniquely positioned to capture, store, process and communicate timely information to decision-makers, for better coordination of agricultural systems.

Earlier, in his remarks, the Centre Leader/Director of CEADESE, Professor Okanlawon Onagbesan, stated that the days were gone “when people simply sit in laboratories to formulate research and publish papers for promotion.” According to him, for research activities to have maximum impact, it was important to ascertain the needs of industry and, subsequently, channel research efforts to those needs, for maximum impact.

Professor Onagbesan disclosed that CEADESE was set up to bridge the gap be-

tween researchers and industry. The workshop, on the other hand, was aimed at exposing researchers to methodologies for data collection and processing, in order to make them more useful, not only to themselves, but also, to government and industry. He added that there would be four more workshops before the end of the year, which would be open to all CEADESE students. He wished the students a successful academic session.

The workshop was attended by 84 participants, 30 of who were female. Resource persons were drawn from the fields of Agriculture, Statistics, Computer Science and ICT and covered a wide spectrum of topics, such as Agricultural Systems; Introduction to Information Systems Development: Application to Agriculture; Principles of Data Manipulation & Information Analysis, using MS-Excel and Data Analysis, using R/SPSS with practical session. Other topics include, Information Storage and Retrieval on (DBMS) using MS Access with practical session, Principles of Information Dissemination and Feedback Mechanisms using ICT Resources (Network, Internet, Web 2.0, DropBox), Ethical and Societal Issues in Agricultural Information Systems Development in relation to security issues, copyright infringement, plagiarism, copyright transfer, etc.

...Trains Students on Software, Poultry Nutrition Techniques



In a similar vein, the Centre also recently organised a training programme for its students on the basic applications of software techniques for data storage, cleaning, and statistical analysis for agricultural research. The training had 41 participants (27 males and 14 females, including faculty and graduate students). It was held in FUNAAB and facilitated by a group of resource persons from the International Food Policy Research Institute/The Nigeria Strategy Support Programme (IFPRI-NSSP) office in Abuja, which included its Training Coordinator, Mr. John Mazunda.

The training was followed by a survey sent to all participants. From participants' feedback, it was discovered that more than 80 percent of them had never used STATA software, prior to the train-

ing. Following the training, however, most found it relevant to their work and planned to use it for future analysis. Participants also expressed interest in learning more advanced software techniques relating to policy analysis and reporting of results, such as SAS, SPSS, GAMS, ArcGIS, Excel, Shazam, and GEMSTAT.

Other trainings conducted by CEADESE included that on 'Advanced Techniques in Poultry Nutrition Research', which was recently organised by the Livestock Science and Sustainable Environment programme. The four-day event, which was attended by 125 people, including Masters and PhD students as well as faculty, had participants from Nigeria, Gambia, Togo, Republic of Benin, Ghana and the Netherlands.

Resource persons included the renowned Professor Layi Adeola from the Layi Adeola Nutrition Laboratory in Purdue University, Indiana, USA. There were also presentations by FUNAAB's Head of Animal Nutrition, Dr. A. V. Jegede, on Feed Formulation as well as the General Manager, Nutrition, Premier Feed Plc, Ibadan and Dr. Hussein Garba, on optimising feed, using enzyme technology.

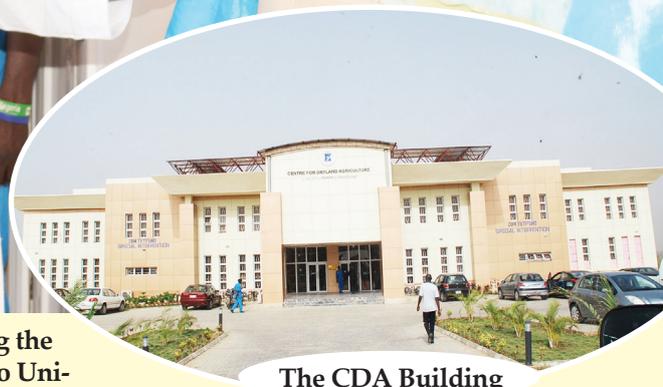
Others were by Dr. Herbert Dei of the University for Development Studies, Tamale, Ghana, who spoke on modern methods of conducting poultry nutrition research and FUNAAB's Dr. A. O. Oso, on maintaining gut health for a healthy poultry.



A Cross-section of participants during the STATA Workshop



The Executive Secretary, NUC, Prof. Abubakar Rasheed, commissioning the Tissue Culture Laboratory of the Centre for Dryland Agriculture, Bayero University, Kano. With him is the Vice Chancellor, Prof. Yahuza Bello (right)



The CDA Building

Prof Rasheed Commissions BUK's Centre for Dryland Agriculture Building, Tissue Culture Lab

The Executive Secretary, National Universities Commission (NUC), Professor Abubakar A. Rasheed, on Friday, 17 March, 2017, commissioned the Tissue Culture Laboratory and new building of the Centre for Dryland Agriculture (CDA) at Bayero University, Kano (BUK).

While commissioning the Laboratory, the Executive Secretary stated that it was the mandate of the NUC, being the coordinating body for the World Bank-assisted Africa Centres of Excellence (ACE) project, to

tour all the Centres in the country and monitor their progress. He said he was at the Ahmadu Bello University, Zaria, the day before, to visit its Africa Centre of Excellence on Neglected Tropical Diseases and Forensic Biotechnology (ACENTDFB).

Professor Rasheed commended CDA for installing state-of-the-art facilities that would advance the conduct of research in multi-disciplinary areas. He expressed hope that many Nigerian universities would learn from the tremendous progress made by Bayero University.

The Centre Leader and Director of CDA, Professor Jibrin M. Jibrin, and the Deputy Director, Research and Outreach, Dr. Kabir Mustapha, took the Executive Secretary round facilities at the Laboratory, with Dr. Mustapha explaining the functions and importance of the ultra-modern equipment and facilities.

With the commissioning of the building done, Professor Rasheed took a tour of facilities in the Centre, including the GIS Laboratory, Reading Room, office of the Director and other Research Laboratories.



The Vice Chancellor, Benue State University (BSU), Makurdi, Prof. Moses Msugh Kembe, middle, flanked by (L-R), representative of the Benue State Commissioner for Agriculture, Dr. Thomas Unongu; CEFTER Centre Leader, Prof. D. K. Adedzwa; World Bank Expert, Carl Larsen; Prof. Jens Dolin, University of Copenhagen, Denmark and Prof. Raphael Wahome, University of Nairobi, Kenya, at the opening ceremony of the Joint Training for Africa Centres of Excellence (ACEs) in Agriculture, held at BSU, recently

Agric ACEs, a Visionary Team

Three of the 10 Africa Centres of Excellence in Nigeria, which focus on Agriculture (Centre for Food Technology and Research (CEFTER), Benue State University, Makurdi; Centre of Excellence in Agricultural Development and Sustainable Environment (CEADESE), Federal University of Agriculture, Abeokuta and Centre for Dryland Agriculture (CDA), Bayero University, Kano), along with their counterparts in Ghana, Togo and Cote d'Ivoire, have been commended for being a visionary team.

The commendation came from a World Bank Expert, Carl Larsen, at the opening of a joint training workshop, organised by the six Agriculture ACEs in West Africa: the three in Nigeria as well as the West African Centre for Crop Improvement (WACCI), University of Ghana, Legon; Centre of Excellence on Avian Science (CER-SA), University of Lome, Togo; and the Centre on Climate Change Biodiversity and Sustainable Agriculture (CCBAD), Felix Houphoet Boigny University, Abidjan, Cote d'Ivoire; in collaboration with the World Bank and

the National Universities Commission (NUC).

Larsen, who spoke on behalf of the resource persons, thanked CEFTER for hosting and all participants for attending the workshop. He said he was particularly impressed with the collaboration between the Agriculture ACEs in West Africa, noting that this was in line with the aim of the ACE project, which is to, jointly promote regional collaboration and specialisation, to address particular common regional developmental challenges. He, therefore, urged the Centres to keep it up. The workshop, he said, was planned to be engaging and to facilitate knowledge sharing, where all ideas would be united for better understanding.

Other speakers at the opening ceremony also commended the six Centres for collaborating and synergising to achieve their goals and objectives, calling on all other Centres (which focus on Health, Science, Technology, Engineering and Mathematics) to emulate them.

Welcoming the participants, the

Vice Chancellor of BSU, Prof. Moses Msugh Kembe, commended the ACEs for coming together to organise the training, saying the workshop could not have come at a better time than now when teaching and learning required the application of new technology-driven techniques, when sustainable funding of educational programmes remained a major challenge in many institutions and also when so much desire had been expressed for the attainment of gender balance at all levels of education.

Benue State Commissioner for Agriculture, Hon. James Anbua, who was represented by the Director of Agricultural Services, Dr. Thomas Unongu, declared the workshop open. He said, among other things, that the State was proud to have a Centre of Excellence in Agriculture, for which it was well known, sited at its University. According to him, the Ministry of Agriculture was working very hard to maintain Benue State's status as the Food Basket of the country and urged CEFTER to partner with the Ministry to maintain it. He thanked the participants and resource persons for coming and wished

them a successful training.

The Leader of CDA, Professor Jubrin M. Jubrin affirmed the university managements commitment to the ACE project, which informed its constitution of a strong team to participate in the workshop. He thanked the host Centre and informed the meeting that CDA aimed to be a regional Centre of Excellence in teaching, research and development in agriculture, especially in dry land.

Leader of CEADESE, Professor Onagbesan Okanlawon, who was represented by Professor Babatunde Adewumi, also thanked CEFTER, saying CEADESE was excited to be participating in the workshop because of the opportunity it afforded CEADESE to acquire new knowledge in delivering one of its goals, which was to generate environmentally-smart agricultural innovations and patents in various fields of expertise and in sustainable environment.

Representative of the Centre Leader of WACCI, Professor Eric Danquah, thanked the host and the experts for organising the workshop. He gave a brief introduction of his Centre and expressed his team's high expectations of

the outcome of the workshop.

Leader of the Regional Centre for Avian Sciences (CERSA), Lome, Dr. Jacob Tona, who was represented by Professor Agbonon Amegnona gave a brief overview of his Centre and wished for a successful and profitable workshop for all present.

The Centre Leader for the ACE in Climate Change Biodiversity and Sustainable Agriculture (CCBAD), Cote d'Ivoire, Mr. Kouame Nguessan Francois, thanked the host and, like his counterparts, gave a brief overview of his Centre and expressed hope for a profitable workshop.

The Leader of CEFTER, Professor D. K. Adedzwa, welcomed everyone and thanked his Vice Chancellor for the support to the Centre. He also expressed similar hope as his colleagues on the outcomes of the training.

The week-long workshop, with the theme, Innovative Teaching and Learning, Fund Raising and Gender Balance in Education, had participants drawn from the six Centres, NUC and some of CEFTER's partner institutions, the Federal University of Agriculture, Makurdi; University of Mkar,

Benue State and Michael Okpara University of Agriculture, Umudike, among others.

The training format was interactive, with few presentations and ample time for discussions, exchange of ideas among participants and practical work in groups. Participants discussed issues, such as areas for improvement; project sustainability; institutional commitment to the Project; and promoting university-industry linkages.

Days Two to Five of the training workshop featured Sessions 1 and 2 on each day and covered topics, such as Smart Classroom (IT-supported teaching/learning), Fundraising (how to approach sustainable fundraising in ACE), Didactics (implementation of research-based teaching in higher education) and Gender (how to improve female enrolment in ACEs).

Other resource persons were Professor Jens Dolin and Assistant Professor Jesper Bruun, University of Copenhagen, Denmark; Mrs. Titlope Fakoya, a Consultant Gender Adviser and Trainer; Professor Raphael Wahome, University of Nairobi, Kenya and Mrs. Betty Kajoh of Excel Education Global Consult.



Guests and participants at the opening ceremony of the Joint Training

Prof Rasheed Visits ABU's Centre for Neglected Tropical Diseases

The Executive Secretary, National Universities Commission, Professor Abubakar A. Rasheed, on Thursday 16 March, 2017, formally visited the Africa Centre of Excellence in Neglected Tropical Diseases and Forensic Biotechnology (ACENTDFB), at the Ahmadu Bello University (ABU), Zaria.

ACENTDFB was established to build capacities, through postgraduate training, research and development of inventions in the area of neglected tropical diseases (NTDs), in order to control these tropical diseases and make advances in Biotech-

nology.

The Executive Secretary, who was accompanied by the ACE Project Coordinator, Dr. Joshua Atah, paid a courtesy call on the Vice-Chancellor, Professor Ibrahim Garba. They both pledged their support for the ACE project and reaffirmed their commitment to the sustainability of all the 10 ACEs in Nigeria.

Other members of the ABU team present were, Professors Junaid Kabir, H.M. Inuwa, Y.K.E. Ibrahim, M.N. Shu'aibu, S. Ibrahim, M.I. Sule, Jacob Kwaga and S.B. Junaid, as well as Dr. Idowu Aimola.

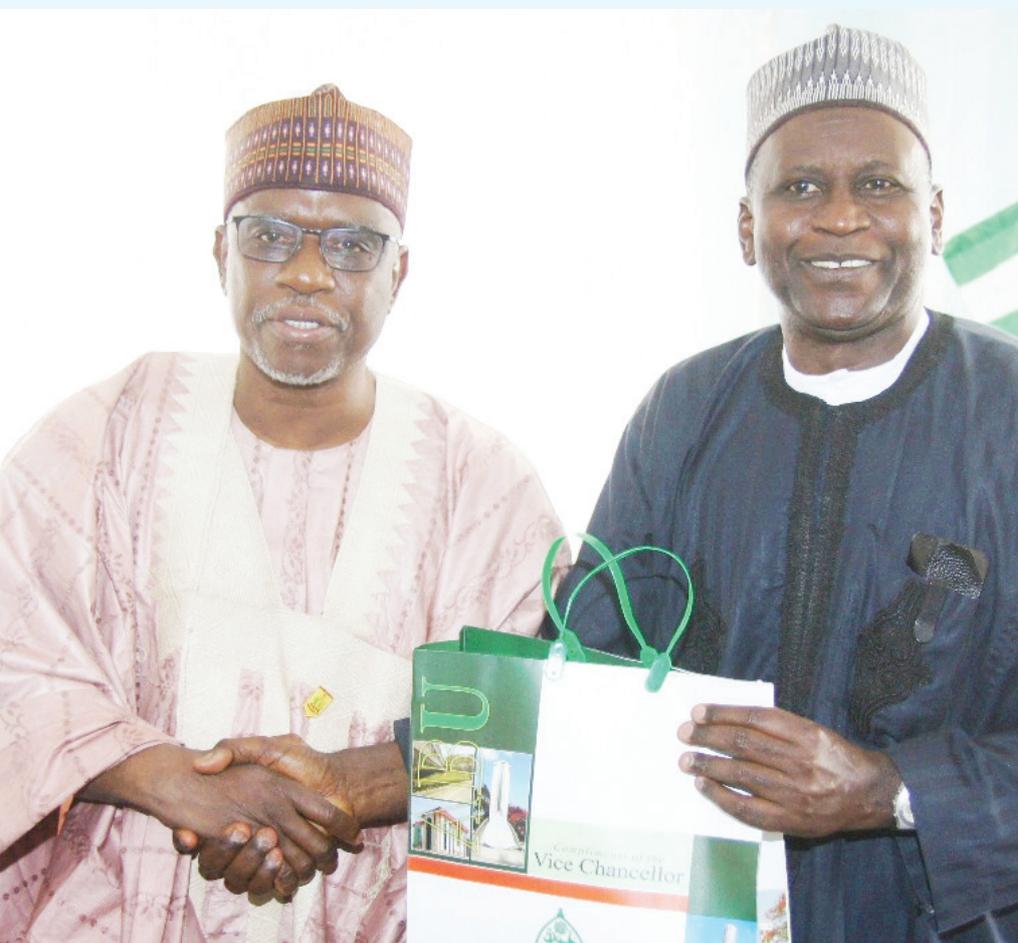
Professor Rasheed said he was de-

lighted to be at ABU on a visit that he considered a home-coming. He that he was not visiting as Executive Secretary of NUC, but as Chairman of the ACE National Project Performance Review Committee (NP-PRC) and Nigeria's representative on the ACE Project Steering Committee (PSC). He commended ABU for making Biotechnology the focus of the research and training at the Centre.

Given the importance of the ACE Project in Nigeria, the Executive Secretary explained that NUC made an exception to conduct the accreditation of the programmes of all ACEs outside the regular NUC accreditation calendar of May and November of every year. According to him, he was at ABU, first to visit the Vice-Chancellor, who he considered as the father of ACENTDFB, and later, the leadership of the Centre, in a bid to familiarise himself with the Project, listen to the challenges, advise appropriately and thereafter, present a report to the next meeting of the PSC. Similar visits were being planned for all the other ACEs in Nigeria, he said.

Professor Rasheed expressed satisfaction with the recent changes made by ABU in the governance and running of the Centre. He noted that, given the quality of people from different backgrounds working together as a team, ACENTDFB had the potential to emerge best among the ACEs.

In his remarks, Dr. Atah expressed concern about the pace of disbursements of funds to the Centre, among other identified challenges. He advised that all hands be on deck to address them, ahead of the mid-term review of the Project in May, 2017 and reiterated the need for the university to make adequate provision for the centre in its annual



Vice Chancellor of ABU, Prof. Abdullahi Garba, presenting a Memento to the NUC Executive Secretary, Prof. Abubakar Rasheed



NUC Executive Secretary and ABU Vice Chancellor with the ACE Project Coordinator and the ACENTDFB Team

budget.

The Centre's Project Coordinator, Professor Junaidu Kabiru, stated that efforts were being made to reposition the Centre and forge national and international collaborations. He, therefore, called for support and partnership with other Centres.

The Vice-Chancellor, thanked the Executive Secretary for the visit and also took note of some of the concerns/challenges of the Centre. He said the supervision mission by the NUC, Association of African Universities (AAU) and the World Bank, which took place in November, 2016, had revealed him the potentials and challenges of ACENTDFB. He explained that the University took steps to address the governance and other challenges facing the Centre and that it had now been repositioned to play the leading role that

was expected of it. Professor Garba pledged to hold monthly meetings with the ACENTDFB team until it overcomes all its challenges. He also pledged to make counterpart contributions to the Centre, once there is evidence of progress.

Following the appointment of the Centre Leader, Professor Andrew J. Nok, as a State Commissioner and the appointment of the erstwhile Deputy Centre Leader, Professor H.M. Inuwa as Director of the University's Centre for Biotechnology Research and Training (CBRT), ACENTDFB was restructured. Prof Junaid Kabir and Professor Y.K.E. Ibrahim were in February, 2017, appointed as Project Coordinator and Deputy Centre Leader, respectively.

The Executive Secretary and the team moved to the ACENTDFB secretariat to inspect the laboratories,

library and other facilities. The team later went into a closed door meeting to discuss sundry issues relating to the smooth and efficient management of the Centre.

Some of the specific requests made by the Centre and faculty members included:

- NUC's support for the acquisition of more equipment for the laboratories,
- NUC's guidance to enable the undergraduate programmes in the Centre to attain full accreditation,
- NUC's intervention to ensure that the staff, whose responsibilities include medical related activities, earn the same allowances as medical personnel.

The Executive Secretary promised, to consider all the requests and consult with universities, university-based unions and professional bodies on how to address the concerns.

ACENTDFB Discovers New Specie of Trypanosome



A Researcher at the DNA Lab (DfG Lab), Centre for Biotechnology Research and Training (CBRT), ABU, Zaria

In one of its on-going Molecular Epidemiological studies, the Africa Centre of Excellence in Neglected Tropical Diseases and Forensic Biotechnology (ACENTDFB), at the Ahmadu Bello University (ABU), Zaria, has discovered a new specie of trypanosome in Niger State.

No fewer than 25 on-going research works on Trypanosomiasis are being undertaken by the Centre, which are focused on the following:

- Optimisation of sensitive and affordable PCR-based methods for diagnosis of parasitic trypanosomes in mammalian hosts (blood and tissue) and insect vector (tsetse fly midgut, proboscis, saliva and droppings).
- Expression pattern of trans-sialidase genes and EP Protein in the infection cycle of *T. congolense* in their natural hosts and environment towards the development of potential DNA vaccine targets against the disease.
- Molecular epidemiological survey on livestock and tsetse flies naturally infected with trypanosoma species in some states in Nigeria and the Gambia, with studies in Niger and Kaduna States of Northern Nigeria almost completed.
- Effect of certain metals on the expression of Trans-sialidases in *Trypanosoma congolense* infected mice.

Other areas of the Centre's research are Filariasis and Rabies.

In Filariasis, the major focus is on:

- The diagnosis and distribution of *Filaria* parasites in Nigeria and the sub-region. Research in this unit is also focused on studies of the vectors, *Anopheles gambiae*, *A. funestus* and *Culex quinquefasciatus* involved in transmission, and
- Determining the role of concurrent helminth infections in some Neglected Tropical Diseases and how to alter them for optimal vaccine-induced responses. Investigation is on-going on the effect of concurrent helminth infection in novel DNA- and/or bio-nanoparticle-based vaccination strategies.

For Rabies, on-going research studies are focused on:

- Understanding the expression, modulation and reprogramming of various immune genes involved in rabies pathogenesis,
- Development of more specific and sensitive molecular detection techniques of rabies in various animal hosts, and

- Providing baseline data on the epidemiological status of rabies in the sub-region.

The above are in line with the Centre's Mandate and objectives. ACENTDFB was conceived to achieve the following mandates:

- Provide skilled manpower in the diagnosis, management and prevention of neglected tropical diseases;
- Provide baseline data on the epidemiological status of a number of neglected tropical diseases prevalent in the study region;
- Develop and produce vaccines for the prevention of neglected tropical diseases;
- Train man power in the general areas of molecular Biotechnology techniques and forensic science for solving related problems; and
- Establish a facility and channel for security agencies and the society in resolving security, legal, paternity and other related issues.

The Centre currently has a to-

tal enrolment of 95 postgraduate students, made up of 19 PhD, 60 MSc and 16 PGD students. Six of the PhD/MSc students are awaiting external defence. Foreign students currently enrolled in the programme are from Cameroon and the Gambia. The PGD programme, which commenced in the 2015/2016 session, is run on a part-time (weekend) basis.

The Centre also constantly mounts short courses for middle level manpower capacity building. Since its inception, the Centre has enrolled 122 students for short term training in aspects relevant to biotechnology applications. Some of the trainings were conducted in Nigeria and Cameroon, in collaboration with the University of Bremen, Germany.

Students enrolled in the ACENTDFB programmes have unfettered access to well-equipped research laboratories located in the Centre for Biotechnology Research and Train-



Forensic Biotechnology Lecture Room, Department of Biochemistry

ing, Multi-User Science Research Laboratory, Molecular Epidemiology Laboratory of the Department of Veterinary Microbiology and Public Health and the Forensic Biotech Lab in the Department of Biochemistry. The Multi-user Science Laboratory currently houses state of the art analytical equipment, such as NMR, GC-MS, LC-MS, LC-MS-MS, FAAS (Fast Sequential Atomic Absorption Spectrophotometer), AAA (Amino Acid Analyser), XRF (X-ray Fluorescence), EXRD, Elemental Analyser, Preparative and Analytical HPLC.

Faculty and students research works have focused on three main neglected tropical diseases, with different stages of progress recorded.

The Centre has procured substantial stock of chemicals, reagents and other consumables, (about 120 different items) for use in research and training of the students. These materials are provided free for students who need them. In addition, arrangements have been made to

procure those required by students but which are currently not in stock.

Forty-nine PhD and MSc. students are currently carrying out research work. Three of these are Gambian students who have already travelled back to The Gambia for field work and sample collection.

ACENTDFB has, during the past years, carried out rehabilitation/construction of the following activities:

- Upgrading of two lecture rooms in the Department of Biochemistry; each lecture has is provided with multimedia boards and projectors
- Construction/Rehabilitation of Forensic Biotechnology Laboratory
- Renovation of Cold Room in the Centre for Biotechnology Research and Training
- Procurement and installation of Research Equipment (PCR Thermal Cycler, Real time qPCR, Gel Electrophoresis, Gel Documenta-

tion System, Nanodrop Spectrophotometer, Centrifuge, Freezers, Laminar Flow Hood, etc.

The Centre draws its Faculty from six units/departments of the University and collaborates with two national research institutes and four regional and international institutions. The administrative office is housed in the Centre for Biotechnology Research and Training (CBRT) while the degree programmes are domiciled in the Department of Biochemistry. Its academic faculty is made up of 15 Professors, three Readers, four Senior Lecturers and four Lecturer 1, whose areas of expertise are in the Centre's core focus areas of Trypanosomiasis, Filariasis, Onchocerciasis and Rabies.

Towards the realisation of its mandates, ACENTDFB developed and instituted three postgraduate degree programmes and four short term course modules. The Postgraduate programmes (MSc and PhD Biotechnology, and Postgraduate Diploma in Forensic Biotechnology) were approved by the Senate of the University.



Rehabilitated Lecture Room in the Department of Biochemistry



OAK-Park Computer Society Holds 3rd Cyber Security Workshop

The Obafemi Awolowo University ICT-Driven Knowledge Park (OAK-PARK) Computer Society, in collaboration with IBM, recently organised a workshop on Cyber Security certification, which was aimed at providing home-grown intellectual capability, methodologies and manpower to defend and protect the nation's critical infor-

mation infrastructure and industries.

The workshop, which was held at the MTN Centre, University de Parakou, Republic of Benin, was also aimed at developing cyber security products and industries, which would not only benefit government and industry, but also provide a platform for potential export of ICT products.

In his opening remarks, the Director of the Institute of

Technology of University de Parakou Dr.Sosthene Frederic Tokoudagba, commended the Africa Centres of Excellence (ACE) Project for providing an opportunity for the training and encouraged participants to take advantage of it, to gather useful information and glean best practices.

The Workshop was attended by 75 participants, mainly from Nigeria and the Republic of Benin.



Participants at the Workshop

CERHI PhD Student Attends Workshop on Reproductive Health

Despite global efforts by various countries at providing efficient, good quality and affordable reproductive health care to all citizens, maternal health care-related complications are still on the increase. One of these complications is Obstetric Fistula, which takes a heavy toll on women in the society, with many experiencing adverse social and medical consequences.

Cognisant of the adverse effects of maternal healthcare-related complications, the Africa Centre of Excellence in Reproductive Health and Innovation (CERHI) of the University of Benin (UNIBEN), recently sponsored one of its PhD students, Jainaba Sey-Sawo, to the first International Conference on Reproductive Health,

held at the Kenyatta University Conference Centre-Nairobi, Kenya.

The three-day Conference with the theme “Ending Obstetric Fistula in a Generation” was organised by the School of Public Health, Kenyatta University and was aimed at exchanging and documenting information on how to end Obstetric Fistula in contemporary society, providing a forum for network of people involved in fistula prevention and management as well as facilitating future policy action programme.

While Obstetric Fistula has been virtually eradicated in the developed world, due to improved medical care, it is estimated that at least two million women and young girls suffer from Obstetric Fistula, particularly those living in poverty, in developing countries, across sub-Saharan Africa. There are fears that prevalence figures may be much higher, though, considering the fact that many of the affected women live in isolation and never seek medical or psychological help.

The Conference was broken down into four sub-themes, namely: Best Practices and Model of Training Workers in Fistula Management; Community Engagement; Tracking of Fistula Survivors; as well as Research, Advocacy, Policy and Legal Framework.

Dignitaries at the Conference included the first lady of Kenya, Her Excellency, Margaret Kenyatta. Participants were drawn from Pakistan, UK, Somaliland, Canada, Nigeria, Kenya Ministry of Health, UNFPA and AMREF, Kenya, among others. Other participants included health practitioners, lecturers from other Kenyan universities and postgraduate students.

Papers presented at the Conference included that by CERHI’s Jainaba Sey-Sawo, on “Trend and Indications of Caesarean Section in an Urban Tertiary Health Facility, The Gambia.”



Ms. Jainaba Sey-Sawo

Africa Centre of Excellence (ACE)	Discipline	Key Academic Partners	Existing Industry/Private Sector Partners	Education/Research/Focus Area
<p>ACE in Materials Science African University of Science and Technology (AUST), Abuja, Nigeria</p>	STEM	<p>National and international partners including:</p> <ul style="list-style-type: none"> • Kwame Nkrumah University of Science and Technology (KNUST), Kumasi Ghana. • University of Sao Paulo, Brazil. • Rutgers University, Piscataway, NJ, United States. • Nnamdi Azikiwe University, Awka, Nigeria. • Stanford University, USA. 	<ul style="list-style-type: none"> • The Sheda Science and Technology Complex (SHESTCO), Abuja, Nigeria • National Agency for Science and Engineering Infrastructure (NASeni), Abuja, Nigeria 	<p>The Pan African Materials Institute (PAMI) uses a systems-based interdisciplinary approach to undertake training and research activities in the areas of materials for solar energy, health, water purification and affordable housing/infrastructure. PAMI also supports the training of a critical mass of PhD students, as well as professionals from industry, government, business and development stakeholders who can contribute effectively to the development of West and Central Africa. The Centre also uses a materials approach to develop effective solutions to African needs in: solar energy; disease detection and treatment; water purification and affordable housing/infrastructure. These it is achieving by engaging teams of mathematicians, computer scientists and physicists.</p>
<p>ACE for Oil Field Chemicals University of Port Harcourt, Nigeria</p>	STEM	<ul style="list-style-type: none"> • IFP School, France • University of Mines and Technology Tarkwa, Ghana • University of Witwatersrand, South Africa. • University of Abomey-Calavi, Benin • University of Lome, Togo. 	<ul style="list-style-type: none"> • Total E&P Nig. Ltd (TEPNG) • Shell Petroleum Dev. Company (SPDC) • Schlumberger, Nigeria • Petroleum Technology Development Fund (PTDF), Abuja • FUGRO Nig. Ltd. 	<p>Oil drilling, well completion and production enhancement require the use of several chemicals known as oilfield chemicals. Billions of dollars are spent, annually, in importing oil field chemicals for oil and gas activities in Africa, but the raw materials for these chemicals are readily available, locally. The University of Port Harcourt's strategic plan to establish a Centre of excellence in Oil Field Chemicals Research and Development is in line with "The Nigerian Content Act aspiration", which came into effect in 2010. The Board has commenced operations to realise the aspiration of the Federal Government of Nigeria to increase indigenous participation in the oil and gas industry, build local capacity, create linkages to other sectors of the national economy and boost industry contributions to the growth of our National Gross Domestic Product.</p>
<p>ACE in Science, Technology and Knowledge, Obafemi-Awolowo University, Ile-Ife, Nigeria</p>	STEM	<ul style="list-style-type: none"> • University of Calabar. • 2iE Institute, Ouagadougou, Burkina Faso. • University of Liberia, Monrovia (ULM). • Kwame Nkrumah University of Science and Technology (KNUST) Kumasi, Ghana. • Stanford Research Institute, USA 	<ul style="list-style-type: none"> • CHAMS Nigeria PLC • MATEK Ventures PLC • Huawei, China • City Business Computers, Nig. Ltd. • Kenol Nigeria Limited • KT Innoedu of Korea 	<p>The Centre of Excellence will facilitate the convergence of technological advances in various disciplines, namely ICT, food and beverages processing, pharmaceuticals and agriculture and enhance the development, transfer and commercialisation of technology and research outputs. It will also promote the launch pad for start-up companies, borne out of university research activities and advancement, by partnering with companies, who will have the competitive advantage of close proximity and direct access to the intellectual infrastructure and output of the university.</p>

Africa Centre of Excellence (ACE)	Discipline	Key Academic Partners	Existing Industry/Private Sector Partners	Education/Research/Focus Area
<p>ACE for Genomics of Infectious Diseases Redeemer's University, Ede, Nigeria</p>	<p>Health</p>	<ul style="list-style-type: none"> • Université Cheikh Anta Diop, Senegal. • University of Sierra Leone. • Noguchi Institute, University of Ghana. • University of Cameroon. • Harvard University, USA • Tulane University, New Orleans, Global health Institute, Duke University, North Carolina, USA. 	<ul style="list-style-type: none"> • Kenema Government Hospital, Kenema, Sierra Leone; • Broad Institute, Cambridge, MA, USA 	<p>The ACEGID is equipped with a state-of-the-art laboratory for teaching and genome sequencing of microbial infections and serve as an international hub for academic and research excellence in microbial and human genomics.</p> <p>The Centre played an integral role during the recent Ebola crisis in Nigeria, as the go to place for testing the Ebola virus as well as supporting the response in Sierra Leone</p>
<p>ACE on Neglected Tropical Diseases and Forensic Biotechnology Ahmadu Bello University, Zaria, Nigeria</p>	<p>Health</p>	<ul style="list-style-type: none"> • University of Ngaoundere, Cameroon. • University of Nagasaki, Japan. • Kuvim Medical Centre of Hebrew University, Israel. 	<ul style="list-style-type: none"> • Center for Disease Control and Prevention, Atlanta, USA. • Nigerian Institute for Medical Research, (MIMR), Lagos 	<p>In line with the London Declaration and the WHO Roadmap on Neglected Tropical Diseases, (NTDs), this ACE seeks to address the four major challenges of discovery, diagnosis, treatment, prevention and eradication of NTDs. The focus will build on the well-documented research achievements within the consortium, on the diseases trypanosomiasis, filariasis and rabies. Furthermore, the know-how would be deployed in training manpower in other fields such as forensic biotechnology.</p>
<p>ACE in Phytomedicine Research and Development University of Jos, Nigeria</p>	<p>Health</p>	<ul style="list-style-type: none"> • 18 national and international partners including: • KwameNkrumahUniversity of Science and Technology (KNUST), Kumasi, Ghana • Université de Ouagadougou, Burkina Faso • University of Lome, Togo. • GDP Ayurvedic University, New Brunswick, NJ, USA. 	<ul style="list-style-type: none"> • Neimeth International Pharmaceuticals, Nigeria • Juhel Nigeria Ltd, Enugu, Nigeria • Europharm Nig. Ltd. Jos, Nigeria 	<p>The establishment of this Centre of Excellence within the Faculty of Pharmaceutical Sciences will project the University of Jos as a regional leader in the study, promotion, research capacity building and expertise development in Phytomedicine. This will promote scholarship in the knowledge and application of ethnomedicine. The Centre will also promote collaboration and entrepreneurship, which will raise the level of awareness of ethnomedicine research and ethical issues.</p>
<p>ACE in Reproductive Health and Innovation University of Benin, Nigeria</p>	<p>Health</p>	<ul style="list-style-type: none"> • University of Benin Teaching Hospital (UBTH) • University of Ibadan and its Teaching Hospital • AhmaduBelloUniversity and its Teaching Hospital 	<ul style="list-style-type: none"> • Nigerian Institute for Medical Research and Training (NIMR) • Noguchi Memorial Institute for Medical Research 	<p>The ACE will strengthen and integrate reproductive health into the undergraduate curricular of the University's basic medical science courses (anatomy, physiology, biochemistry, laboratory sciences) as well as in related clinical sciences departments (obstetrics and gynecology, paediatrics, institute of child health, community medicine, and internal medicine). The undergraduate training curricula in the social</p>

Africa Centre of Excellence (ACE)	Discipline	Key Academic Partners	Existing Industry/Private Sector Partners	Education/Research/Focus Area
		<ul style="list-style-type: none"> • University of Ghana • University of Mali • Harvard School of Public Health • Aberdeen University 		<p>sciences and Law will also be strengthened with reproductive health courses that include population studies, demography, medical sociology, health economics and reproductive health law.</p>
<p>ACE in Dry-land Agriculture Bayero University, Kano, Nigeria</p>	<p>Agriculture</p>	<ul style="list-style-type: none"> • 11 regional and national partners including: • International Institute of Tropical Agriculture (IITA), Nigeria • University of Nairobi, Kenya • Galilee International Management Institute, Israel • Kano State University of Science & Technology, Nigeria • Faculty of Agriculture, University of Alexandria, Egypt 	<ul style="list-style-type: none"> • Sasakawa Africa Association/Sasakawa Global 2000, Nigeria • Drylands Research, UK • Dandago Agricultural Machinery Company, Nigeria • Maina Seeds, Nigeria • Jubaili Agrotec Limited, Nigeria • State Agricultural Development Projects, Nigeria 	<p>In Africa, about 43% of land is estimated to fall within the drylands, where approximately 325 million people reside. In order to respond to the needs of the West and Central African (WCA) dryland region, through relevant high level human capacity development and demand-driven research, Bayero University, Kano (BUK) established the Centre for Dryland Agriculture (CDA) in 2012, with the support of the MacArthur Foundation. The existing framework of the CDA is now being consolidated into true regional Centre of Excellence in Dryland Agriculture, through the World Bank Africa Centre of Excellence project. Through the activities of the CDA, Bayero University aims to strongly link education and research with the development needs of the region, thus contributing to food security, improved livelihood, and reduction in poverty and conflicts. The main objective of the CDA is to specialise as a regional Centre of Excellence in Dryland Agriculture, delivering quality training and applied research in response to the needs of the WCA dryland region.</p>
<p>ACE for Food Technology and Research Benue State University, Makurdi, Nigeria</p>	<p>Agriculture</p>	<ul style="list-style-type: none"> • University of Agriculture, Makurdi, Nigeria. • Tshwane University of Technology, Pretoria, South Africa. • Wiberforce University, Ohio, USA. • Wright State University, Ohio, USA 	<ul style="list-style-type: none"> • Benue State Agric & Rural Development Authority 	<p>Post-Harvest losses constitute the major factor contributing to insecurity in Sub-Saharan Africa but are often overlooked. It is estimated that Africa loses food, valued at US \$4.0 billion, yearly, due to post-harvest losses. This serious shortfall leads to stunted development, malnutrition, diseases and death of millions of children. Post-harvest technologies currently in use are either too expensive or unsuitable for local environments. Chemicals, which are widely used, have often proven hazardous. Nigerian and indeed African teachers and researchers need to be equipped with adequate facilities to be able to utilise multidisciplinary approaches to embark on high capacity building through teaching, conduction of cutting edge research and promotion of active outreach programmes to address post-harvest food losses. Through the support of the World Bank, the Benue State University has established the Africa Centre of Excellence for Food Technology and Research (CEFT-ER) to address these challenges. The</p>

Africa Centre of Excellence (ACE)	Discipline	Key Academic Partners	Existing Industry/Private Sector Partners	Education/Research/Focus Area
				<p>success of CEFTER will depend on the strong and long standing partnerships between academic, research and extension institutions in Nigeria and the sub-region.</p> <p>The mandate of CEFTER is to promote teaching, research and extension in post-harvest sciences, enhance agricultural productivity and industrial output for the socio-economic advancement of Nigeria and Africa.</p>
<p>ACE for Agricultural Development and Sustainable Environment Federal University of Agriculture, Abeokuta, Nigeria</p>	Agriculture	<p>National and international partners including:</p> <ul style="list-style-type: none"> • University of Abomey-Calavi, Benin Republic. • University of Lome, Togo. • Njala University, Sierra Leone. • University of the Gambia, Banjul • Galilee International Management Institute, Nahala, Israel. • Purdue University, Indiana, USA. • University of Maryland, USA. 	<ul style="list-style-type: none"> • Obasanjo Holdings, Nigeria • Vegefresh Company Limited, Nigeria • Lisabi Mills, Nigeria • Agrifca (Pty) Ltd/Elpasso Farms, South Africa • Flour Mills PLC, Nigeria 	<p>The Centre is focused on teaching, learning and research excellence in agricultural productivity in the face of climate change challenges. The action plans to achieve these objectives are divided into two broad activities: capacity building and research projects. The capacity building programme involves introducing new post-graduate curricula leading to Master and Doctoral Degrees in Agricultural Development and Sustainable Environment (MAgSE/PhD) in response to specific productivity challenges, short-term skill acquisition for industry stakeholders, specialised workshops and internships. The action plan for research programme consists of partnering with 18 regional and 13 international Centres on more than 100 post-graduate research projects in six West African countries that will be conducted with up-to-date research facilities. In addition, the Centre will embark on thematic agricultural research projects of international interests targeted at mitigating climate and environmental challenges in the sub-region. The research project activity is divided into 5 disciplines: agricultural policy development, agricultural mechanisation, crop improvement and seed enterprise development, livestock production, food processing research and hydrology. The curriculum for the ACE was arrived at based on initial needs assessment from interactions among the main partnering institutions in Nigeria and the other Fivefive regional countries.</p>