



CEFTER NEWS



A publication of Centre for Food Technology and Research

September, 2018

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CEFTER THE JOURNEY SO FAR

Benue State University is one of the ten (10) World Bank Africa Centres of Excellence (ACE) in Nigeria and one out of nineteen (19) such centres in the West and Central African sub-regions. The University won the World Bank grant after a stiff competition involving more than one hundred (100) Universities in the sub-region.

It is indeed gratifying to note that Benue State is the only state owned University in Nigeria out of the total ten (10) that were awarded the ACE. The grant is worth eight million (\$8,000,000.00) and covers a period of five (5) years.

In June, 2014, the Benue State University Governing Council approved the establishment of the Centre for Food Technology and Research (CEFTER) with the core mandate of controlling post-harvest losses.

Benue State is regarded as the Food Basket producing a wide range of crops such as vegetables and fruits. Unfortunately, substantial quantity of these food crops are lost due to lack of adequate post-harvest storage facilities. Through the support of the World Bank, CEFTER was established to address these challenges.

The mandate of CEFTER therefore, is to teach research and extension in post-harvest sciences, enhance agricultural productivity and industrial output for the socio-economic development of Nigeria and Africa. In a nutshell, CEFTER has the following core objectives:

- To develop a critical mass of well-trained African students in the control of post-harvest losses;
- To empower African researchers to identify technologies that will reduce post-harvest losses;
- Development of technologies through applied

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Prof. Kembe, BSU VC

of the Nation grains, tubers, however, a lost due to technologic CEFTER challenges. to promote harvest and advancement CEF

Prof. Daniel Adedzwa speaks on future of CEFTER

Lawrence Semaka of CEFTER News sat down for a one-on-one chat with the Centre Leader, Professor Daniel Adedzwa on issues concerning the operations of the Centre since inception to date. The eloquent Professor of Biological Sciences in his characteristic manner was incisive in throwing light on a wide range of topics such as the objectives of setting up the Centre, funding, the challenges confronting the Centre as well as the future of the Centre at the expiration of the World Bank grant. Excerpts.

Q: How far has CEFTER gone in realising its established objectives?

A: Thank you very much. CEFTER had three major objectives. The first one was to train a critical mass of Masters and Phd students in the area of post-harvest losses. The second objective was to conduct research and identify technologies in the same area of post-harvest losses that would be useful in controlling post-harvest losses in the right areas. And the third objective was to extend these technologies to the rural communities. Now beginning with the first objective of training Postgraduate students, we have so far enrolled about 442 Postgraduate Students, both Phd and Masters Students. Out of the 442, 23 are regional students. Because the project demands that we should cover the whole of West and Central Africa. That is far below our expectations but at least for the first time we have been able to bring non-Nigerians into a university. Now the second objective was to conduct research and to produce technologies that would be useful to farmers. Beginning with our students, they have been able to develop about 70 different food products that are of high quality and of good shelf life.

In addition to this, we have published 66 articles in International journals. 28 of these have been verified by the World Bank for which we have been paid. The others are still undergoing verification. The World Bank has to make sure that what you have published is in the papers that they want and it's of good quality.

Now talking in the area of outreach programs, we have been able to train about 4500 full time food handlers; most of them in Nigeria but some outside of the country. Out of that number 4000 are the Cooks that are participating in the school feeding program in the state. And then. We have also trained about 200 Cameroonian refugees.

And this was a very very useful experience. When you go to a camp where refugees stay the environment is very very hostile and hygiene is very poor. So we extended the training to them so that they can benefit from good quality cooking with storage of the food they have. We have not just stopped at training. Masters and Ph.D, we have also been working with Akperan Orshi College of Agriculture, Yandev where we have trained students for extension services in various aspects of post-harvest control. So I would say that majorly, we have achieved a lot of the objectives major objectives that we started with.

Q: Give us an idea of your experience in managing the affairs of CEFTER from inception to now.

A: Let me just say that the experience has been that of satisfaction. All the stakeholders that we have worked with have always supported us effectively beginning with the first Vice-Chancellor who supervised this project – Prof. Charity

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Prof. Daniel Adedzwa

WEST AND CENTRAL AFRICA POST-HARVEST CONGRESS AND EXHIBITION



Dr. Barnabas Ikyo

The Benue State University Centre for Food Technology and Research, CEFTER (Africa Centre of Excellence) in collaboration with its partners is organising the first ever Post-Harvest Congress and Exhibition for West and Central Africa.

With the theme: “Upscaling of Post-Harvest Activities in West and Central Africa”, the event is aimed at bringing the issue of post-harvest losses with its attendant economic implications to the front burner.

Speaking during an interview with CEFTER News recently, the Deputy Centre Leader, Operations, Dr. Barnabas Ikyo explained that “stakeholders in Africa have come together to put this Congress to enable create a platform for both academics, farmers, food marketers, agricultural industries and government agencies to come and dialogue on what is needed to be done to stop the menace of post-harvest losses”.

The event according to him is slated to hold in Abuja

between 17 to 21 of September, 2018 at the Musa Yar'Adua Centre, Abuja. The Togolese President Faure Gnassingbe Eyadema will declare the event open while President Muhammadu Buhari is also expected to grace the occasion.

Dr. Ikyo disclosed that scientists are coming from all over the world as well as an expert from Denmark to train the next generation of scientists on post-harvest losses. “We are also having representatives from the World Bank, International Trade Center in Geneva, representative of the private sector coming in from the UK to make presentations” Dr. Ikyo said.

President of the Africa Development Bank, Prof. Akinwumi Adesina will give a keynote address.

Dr. Ikyo expressed appreciation to the ADB, Agro Nigeria and other partners for their show of great interest and sponsorship support to ensure that the event is a success.



Dr. Barnabas Ikyo, Deputy Centre Leader, Operations

research for reducing post-harvest losses and

d. Engagement with communities, farmers and industries in dissemination of technologies in post-harvest losses.

Beyond the above objectives, CEFTER according to the Deputy Centre Leader, Operations, Dr. Barnabas Ikyo has also “enhanced the quality of higher education in West and Central Africa in the thematic area and in this instance the control of post-harvest losses in the region. We have admitted over 300 masters and Ph.D. students. We have been training them and giving them the upgraded quality education that will be comparable to what is obtained anywhere in the world. And the advantage is that this is developed by Africans who know the African problems”.

The Centre has in the past three (3) years been pursuing the development of a critical mass of well-trained Africans that will be able to implement the post-harvest control agenda in the region covering select agricultural extension services, food sciences, food chemistry.

Dr. Ikyo further maintained that CEFTER is also implementing programs in economics that will look at estimates and figures and we would advise policymakers and stakeholders in the post-harvest agenda

Also speaking on the mandate of the Centre, the Deputy Centre Leader, Research and Collaboration, Dr. Sylvester Adejo stressed that far beyond mitigating post-harvest losses, the Centre is about excellence;

‘the establishment of the Centre is going to greatly help the University in realizing its vision of becoming one among the 200 best Universities in the world’

Educational Programmes

In furtherance to its mandate, CEFTER has designed M.Sc. courses in food sciences and technology and related areas multidisciplinary research degrees (PhD) and short courses (PGD) mounted under the following research themes:

- * Food Wastage Management

- * Post-Harvest Physiology
- * Post-Harvest Management
- * Food Sociology
- * Solar Food Preservation
- * Food Transport Management
- * Food Quality Control etc

Specifically, however, the following postgraduate programmes have been mounted by CEFTER for interested candidates:

Ph.D & M.Sc. Programmes:

1. Food Science and Technology
2. Post-Harvest Physiology and Management of Crops
3. Post-Harvest Engineering and Technology
4. Biostatistics
5. Extension and Rural Sociology
6. Analytical Chemistry
7. Food Chemistry
8. Organic/Natural Product Chemistry
9. Food Processing Technology
10. Food Economics

Post-Graduate Diploma Programmes

1. Analytical and Instrumental Chemistry
 2. Consumer Science: Food and Nutrition
 3. Food Preservation
- Short-Term Certificate Course
1. Food Science, Safety and Health

Students Enrolment

CEFTER has a total student enrollment of 423 as at the 2017/2018 academic session. A breakdown of the figure since the 2015/2016 academic session is as follows:

2015/2016		2016/2017	
Ph.D	- 32	Ph.D	- 27
M.Sc.	- 106	M.Sc.	- 100
PGD	- 8	PGD	- 12
Total	- 146	Total	- 139
2017/2018			
Ph.D	- 26		
M.Sc.	- 94		
PGD	- 18		
Total	- 139		

Of this number, seventeen (17) of these students are foreigners mostly from other countries within the West and Central African sub-region. It is worthy of note that 50 students have completed their courses of study and graduated.

The enrolment of foreign students is of great importance to CEFTER because it provides an opportunity for the research activities of the Centre to have a wider reach and

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Angya, she was very co-operative and supported us fully even though this particular proposal was being done during the ASUU strike of 2013, ASUU itself allowed us to continue with the proposal. And that was very very magnanimous of them. And the Vice-Chancellor was always supplying all our needs that we needed throughout this period. And. After we won, she gave us this magnificent building to host us. And also gave us a take-off grant of N20 million. Because at that time we had not drawn on the grant itself. So the take off grant of N20 million by the University was good money.

Now the administration that took over from Prof. Angya have excellently continued with the good work. This is not surprising because Prof. Kembe, Prof Aching and Prof Omodu who are Vice-Chancellor, Deputy Vice-Chancellors respectively were part of the team that won this grant, they understand this project inside out. We have very very good cooperation, no problem. Outside of the university, we work very closely with the NUC and they have been very very supportive of us. All the monies that come from the World Bank comes to us through the NUC and they have never delayed in releasing any money that we have earned. The World Bank itself has placed very stiff conditions for drawing the money. This is just to ensure that you achieve results before you get the money. And once we get the money once we achieve the result which are verified by the Association of African Universities which is based in Ghana, the World Bank just releases the money to NUC and it comes to us. Within the University, the Departments have been very cooperative and the entire University community our partners have all come up wholeheartedly to support this program. That is why we have not really had any hitches.

Q: As the Centre Leader, what has been your major Achievements?

A: We have made quite a number of achievements. Through this program, the university has gotten a lot of infrastructure development. Currently as I talk to you we're building an ultra-modern Post Graduate Center which will have modern laboratories modern facilities for teaching. Adequate office space, hostel's which will accommodate about 100 students. Right now we are living in rented accommodation for our students. So when this is completed we will move into this site. So that's a big value addition to the university. But if you want me to just mention one major achievement, I will say that through this project, Benue State University has been promoted and placed on the world map as one of the major post-Harvest Centers of Excellence in West and Central Africa and indeed Africa and the world. So to sum it up, all that we have done is to place the university on the world map. It's a big



achievement.

Q: In the course of managing the affairs of CEFTER, what would you say have been the major challenges?

A: Inspire of the rosy picture I have painted, we certainly have quite a number of challenges and one of these is the area of internally generated revenue. Because this project would not last forever. And right from the beginning the World Bank has made the University to understand that this grant is going to come to an end so we should put on ground strategies to continue this project. And therefore revenue generation is one of the activities we have been pursuing to make sure that we get our own money so that

when the project phases out, the funding ends, we are going to continue. We have not been very successful here. Because we had targeted that we would get about. 1 million. Dollars by the end of the first four years and up to now would have only be able to generate only about two hundred thousand dollars which is a far cry from the one million but we are still trying. That's one of the challenges.

The second challenge is that of recruiting regional students. The World Bank in setting up this programme wanted us to make this Centre an international Center attracting students from all over West and Central Africa and in fact Africa. And it has been very difficult attracting students from the West African region. I had earlier mentioned to you that we have recruited four hundred and forty two students and only 30 are regional students. The target is that 30 percent of the students in this Centre should be regional students. So far we have less than 5 percent. So that's the big challenge which we are still making sure that we we do everything to to make sure that the numbers come out.

In fact our efforts are already paying off because we have introduced a scholarship scheme for all regional students who come into the Center. Before, most students were not aware of the scheme but now they are aware so they are beginning to apply in large numbers. In fact for the next academic session we have already admitted 16 regional students. So even though that's a challenge we are making progress.

I think the third challenge would be that of International accreditation. The Center is supposed to compete with other Centres around the world. And therefore to be able to do that you have to make sure that your programs have International acceptability. Just like the NUC accredits programs within the country you want to make sure that you get international accreditation. For National accreditation, we've been able to get nine of our programs accredited. And we're pursuing two programs to get international accreditation; the first one was

impact in other African countries

Besides academic programmes, CEFTER students have also participated in some other conferences and workshops such as:

* Conference of the Nigerian Institute of Food Science and Technology, Abuja;

* Course Content Review Workshop held at the University of Mkar, Mkar.

It is also on record that CEFTER students are involved in internship with partner bodies such as SERAPH, BERNADA etc. This collaboration has created a platform for the students to acquire practical knowledge on food processing and preservation. As Dr. Adejo succinctly captures it: “We are creating wealth, employment and seeking ways to improve the economy of the state. The collaboration with the industry, the academia and government agencies have been very fruitful; our students go out and acquire basic practical training from our partners thereby equipping them adequately for the task of combating post-harvest losses. And the Food Week provides a veritable platform where they come and showcase what they have learnt both in the classroom and our industrial partners”

Furthermore, CEFTER has been extending financial grants to some students to facilitate their research programmes. A total number of 302 students have benefitted from this scheme otherwise known as students on support. A breakdown shows that during the 2015/2016 academic session 101 students were given this grant; 111 students benefitted during the 2016/2017 session with 90 students during the 2017/2018 session.

Developing the Technologies to Tackle Post-Harvest Losses

This is a key component of the objectives of CEFTER which is geared towards controlling post-harvest losses. It is on record that since inception CEFTER has empowered one hundred and sixteen (116) researchers to develop various technologies to tackle the challenge of post-harvest losses. The departments where the programmes are housed are doing very well in terms of research, a lot of food products have been developed thereby adding value to the food chain

Of particular note according to Dr. Adejo is the Department of Vocational and Technical Education which has developed a fresh drying machine designed and fabricated by one of the CEFTER students. This work was presented to the World Bank and the team was impressed and they advised that the Centre should get the work published before someone else picks it up. The work has also been exhibited at an exhibition by the Federal Ministry of Science and Technology, Abuja.

Worthy of mention, however are the following technologies that have been developed by CEFTER:

1. Passive solar drier for drying of vegetable products;



Dr. Sylvester Adejo, Deputy Centre Leader, Research & Collaborations

2. Active Solar Drier for drying of tomatoes;
3. Improving the shelf life of mango fruits using gamma irradiation and evaporative cooling;
4. Use of pulse electric field equipment in the treatment of orange juice;
5. Production of bread from wheat defaulted and beetroot composite flour;
6. Quality studies on living stone potato (*Plectranthus esculenta*).

The benefits of the above technologies cannot be over emphasised. They can be used in the drying processes of vegetables and fruits thereby curbing the malady of post-harvest losses.

Again, these technologies will help to reduce over dependence on electric power especially in the rural areas where power supply is a huge challenge. However one key advantage of these technologies is the fact that materials used for the construction were locally sourced, hence they are easy to produce and affordable.

The following are the developers of these technologies mentioned above:

1. Tar Sesugh (M.Sc. Postharvest Engineering)
2. Michael Tertseagh (M.Sc. Postharvest Engineering)
3. Apaa Jacob (M.Sc. Postharvest Engineering)
4. Veronica Angbiandoo Ashaver (M.Sc. Food Science and Technology)
5. Beba Shdrach Luper (M.Sc. Food Science and Technology)
6. Josephine Njoughul (M.Sc. Food Science and Technology)

Engagement with Farmers Industries and Government

As mentioned earlier, CEFTER has been collaborating with relevant partners in the pursuit of its established objectives. Some of these partners are: Seraph Nigeria

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in the area of food chemistry. Another one is in food engineering technology we're hoping that one of our partners the Liverpool John More University will assist us in getting this international accreditation. But earlier arrangements with them fell through so currently we are working with a French agency, that is helping us to get international accreditation

Q: You earlier spoke of the World Bank grants which will soon come to an end, do you have any apprehension in terms of the future or sustainability of CEFTER?

A: We're very hopeful that we'll be able to sustain CEFTER. First and foremost because of the interest that the University has shown in this project. The University entirely owns the project. As I told you earlier on how the first Vice-Chancellor was very supportive; and now Prof. Kembe has also been very supportive too. In fact as I talk to you the University has now put CEFTER on the budget line so that when this program ends, it would become like a department within the University and receive funding along with other departments. So that's a plus for us. On our own, we are making sure that we improve on our internally generated revenue.

In fact we have just sent six of our staff to Uganda to train in proposal writing. You know that's a lot of money floating there from donors if you can write a good proposal you would be able to get the money. So six of our staff have received that training in Uganda. We hope that they would come back and build capacity in the University. We hope that the University would set up a Unit through our own efforts that will be responsible for writing proposals to get funds for the University and for CEFTER. We also contacted some of our neighboring countries so that we can do some contract training. Initially we trained 11 Gambian students here and they were paying us school fees and everything in hard currency. Most of the Master's students have graduated and one of the A Ph.D student is about to graduate now. Currently we are working with the government of Seira Leon and Liberia to see if we can have a similar arrangement where they can send their students here. We train them in various areas that they are interested in promoting excellence in their countries for a fee. We also hope that we will introduce some charges so the student don't come here and just don't pay anything. From these various sources we hope that we'll get enough funds to be able to sustain this program.

Q: Give us an idea of what the forthcoming World Congress and Exhibition is all about.

A: Ok. You know food loss is a big problem the world over and more so in Africa. Now the first Post-Harvest Congress

ever held was in Kenya 2017 last year. And we attended that Congress and we learned a lot about the problems of food losses. Now more than 50 to 60 percent of all food crops that are produced are lost before they reach the table. Now we're producing but most of the food is not reaching the mouth of the people so it's a big problem. The African heads of government met in Malabu in 2014 and they reviewed the situation and said that they want to reduce the level of food losses in Africa by 50 percent in 2025. Up till now as I talk to you we have not seen any action on the ground. Meanwhile food is continually being lost. I don't know of any University in West or Central Africa or Africa that is focused mainly on food losses. Most of our programs have just a little appendage talking about food losses. So now that we are the only Centre



of excellence for control of crop losses in Africa we want to begin to make a mark. And that is why we have begun effort to bring together Heads of Governments, Academicians and farmers in Abuja in this World Food Congress and Exhibition so that we can come and Share our experiences. How is Ghana tackling this problem? How is Guinea tackling this problem? How is Senegal tackling this problem? On our own on a small scale, we think that we are training future scientists that will focus strictly on post-harvest losses

Q: What are the technologies that have been developed by CEFTER students to tackle post-harvest losses?

A: We have students from various disciplines such as chemistry and you know most of the losses that we experience are because of the problem of micro-organisms breaking down barriers of substances. So we have students in chemistry who are targeting areas of Chemistry that make food substances subject to spoilage quickly and how it can be prevented and extended. How can you prepare your food so that the level of microorganisms is reduced so that when it's on the shelf it stays for long. Students in the Department of Vocational and Technical education for example are developing technologies that will be able to preserve food. We also have a student who has developed a machine that will be able to dry produce that farmers produce so that it can store for a long time without spoilage. Some students in physics are using solar energy for example to design equipment that can capture sunlight and concentrate it on drying food. So these are the various ways that students are trying to tackle the aspect of food spoilage

Even though in the department of chemistry we do have a department of food processing we have our partners from the University of Agriculture that work together with the

Limited Makurdi, Terago Nigeria Limited, Agudu Farms Limited, Gboko. The Nigerian Stored Products Research Institute is another, University of Agriculture, Makurdi, College of Agriculture, Yandev are all CEFTER partners.

The key outcome of these collaboration is the training of CEFTER students during the period of internship where they acquire knowledge on better methods of food processing and preservation.

CEFTER'S Impact on BSU

In the course of carrying out its activities towards realizing the established objectives, CEFTER has made tremendous impact on the University community. According to Dr. Ikyo, CEFTER has developed academic program within the existing academic setup that had its own norms and standards. We have ensured that lecturers adopt an innovative method of teaching so that they meet up with their



Dr. Scholastica Banka, Centre Secretary

peers globally; the facilities that are available meet the 21st century goals and the Centre is seen by the international community as a true Centre of excellence. All these were not easy because you need to implement all these in a very rough terrain where issues of power issues of internet issues of people with a different mentality and are very difficult to change. I'm however glad that we have been able to make positive change.

The Centre Secretary, Dr. Scholastica Banka also corroborated the above assertion by stating that "CEFTER has received favourable assessment by the World Bank, the Centre happens to be one of the best of all Centres of excellence in the country. It means that the center has a value addition to the University."

She further explained that the Post Graduate Supervision Training Workshop recently organized by CEFTER for 50 staff of the University cutting across 8 Faculties is an attestation of the Centre's commitment to ensuring academic

excellence. The post graduate supervision training in her words "is to ensure that students graduate on time; so the Center is focused on ensuring that we break this particular attitude of students spending too much time on their Post Graduate programmes".

THE FUTURE OF CEFTER

It is an established fact that the World Bank grant is just for five (5) years. The future of the Centre beyond the grant is therefore a source of concern to many stakeholders. In response to this question, Dr. Sylvester Adejo was very positive saying that: "the Center has a very strong institutional support from the University management; the Centre is to be placed on a budget line by the University Management. The world has its eyes looking at us to see how we can go beyond the World Bank funding; we have already taken steps to patent some of our products, attract other grants by writing world standard proposals, attracting foreign students, and getting our programmes accredited internationally".

Dr. Banka is equally optimistic that the Centre is already thinking of how to get direct funding for the Center. "Recently, some staff of the University were sent to Uganda for training to improve their skills on proposal writing for grants. This we believe is a step that has long term benefits for CEFTER and indeed, the University".

It is pertinent to point out that Management of the Centre has already made bold initiative towards ensuring the sustainability of the Centre at the expiration of the grant. According to Dr. Ikyo, "post-harvest losses is a particular area that has been identified as a developmental challenge in the region. That means that funding has to

be sourced aggressively to be able to do this in the particular way that the project prescribes. Post-harvest loss is a big problem in the region. There's less funding that comes. So if we want to tackle the menace of post-harvest losses from an academic and research perspective we need funding that will come in big to be able to do that. We are requesting for an extension of the funding by three years with the provision of at least two million dollars to go on with the project.

We have got an agreement with the government of the Gambia, we are also working on the agreement with the government of Liberia. In the next admission we have recruited almost 20 foreign students. So we think that by the time they pay their fees at that level will be able to get more funding to support the system".

It is therefore hoped that with the support and commitment of all stakeholders, CEFTER would be able to accomplish its set mandate and serve as a true Centre of excellence.

NUC tasks BSU to expand scope of CEFTER

The management of Benue State University Makurdi, has been charged to widen the scope of the activities of the Centre for Food Technology and Research (CEFTER) by collaborating with relevant stakeholders to make the Centre a truly intentional research Centre.

The Executive Secretary, National Universities Commission (NUC), Prof. Abubakar Adamu Rasheed, gave

through multi-disciplinary dimension such as the socio-economic and political implications of post-harvest losses.

He commended the Vice Chancellor and indeed the management of Benue State University for its collaborative support to the centre which has enhanced the success of the programme.

The NUC helmsman noted with delight that of the ten Nigerian Universities which won the World Bank Centres of Excellence through Competitive Proposals in 2013, BSU was among the first five which are outstanding in the execution of their mandate.

Earlier in an address of welcome, the Vice-Chancellor, Prof. Msugh Moses Kembe, had expressed appreciation to the National Universities Commission for its support to CEFTER which has enhanced the Centre's steady progress.

He disclosed that in a bid to make its impact felt across the world, CEFTER has reached out to industry and academic partners such as Liverpool John More University, UK, Nigeria Stored Products Research Institute, Nigeria Root Crops Research Institute, Teragro Nigeria Ltd, Seraph Oil Nig. Ltd and Mikap Nig. Ltd.

Prof. Moses Kembe also informed the team that CEFTER has a total student population of 273 with 204 national and 10 regional MSC students as well as 58 national and 1 regional Ph.D students.

Tser Vanger, JP, ANIPR
Information/PR Officer



Prof. Kembe (l) with Executive Secretary, NUC, Prof. Adamu Rasheed

this charge during a visit to BSU for an assessment of the activities of the Centre.

According to him, based on the World Bank assessment, CEFTER is on a good trajectory hence the need to open up the activities of the Centre by partnering with the Universities of Agriculture in the country as well as other research institutions through conferences and workshops so that its impact can be felt internationally.

Prof. Abubakar Rasheed stated that the core vision of CEFTER which is on post-harvest losses has enormous positive economic implications considering the huge amount of agricultural products that are lost due to lack of storage facilities, adding that the programme is a well-conceived project that is relevant to ensuring food security.

He urged the team running the World Bank Centre of Excellence to widen the horizon of its activities by approaching the issue not just through the narrow lences of food technology but also



BSU management staff and NUC team.

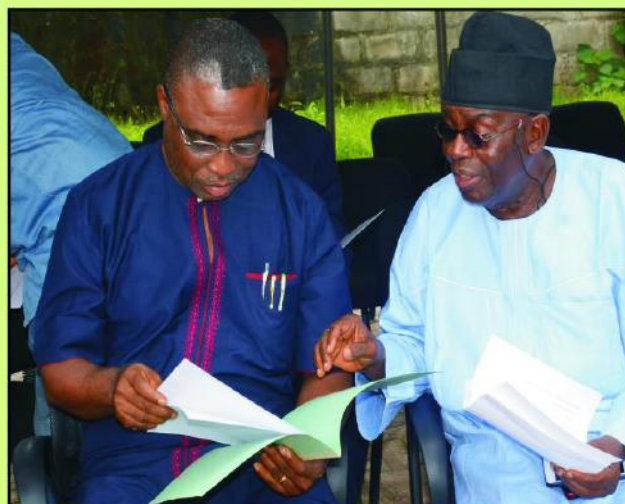
Food Week and Exhibition

The CEFTER food week and exhibition is an annual event organised for CEFTER students to process food crops into products that will have better value and longer shelf life. The event which first took place in August, 2016 and December, 2017 is all about the students displaying the knowledge they have acquired in the classroom on the practical stage.

The aim of the food week is to experiment how they can use this knowledge to better the living condition of the average Nigerian especially the rural farmers who do not have the sophisticated machineries used by the mega companies.

During this event, students are grouped into ten (10) groups and assigned food crops to process into food products. Some of the food products produced during the two food week programmes as well as the students are:

- v Idoko Blessing (M.Sc. Food Science and Technology) Vitamin A gari flour, high quality cassava starch, bread from cassava.
- v Abagu Benjamin (M.Sc. Food Processing Technology) Yam flour custard, bitter yam crisp, whit yam instant pardos.
- v Salaudeen Oladimeji (Ph.D Food Processing Technology) – yoghurt from soya beans.
- v Aben Ben (Ph.D Fish Post-Harvest Technology) – Fabrication of an improved fish drier, fish fortified baby formula, fish spices.
- v Oluoba Nwanjioma (Ph.D Food Chemistry) pepper puree, pepper balm, canned pepper sauce and pepper colorant.
- v Eweh Austin Brown (Ph.D Analytical Chemistry) sesame bread, sesame meatless burger, sesame chinchin.
- v Terkimbi Iveren (M.Sc. Food Processing Technology) – Citrus products, jam, concentrate, orange flakes, carrot juice.



The Centre Leader, Prof. Adedzwa explaining a point of interest to the VC, Prof. Msugh Moses Kembe during the food week and exhibition.



BSU VC and Centre Leader inspecting pepper group.



The Vice Chancellor as well as other dignitaries in a group photograph with some CEFTER students.

Food Week and Exhibition



Dep. Centre Leader presents mango drink to V.C.



Representative of the Commissioner of police being presented with the pepper spray.



Dep. Centre Leader presents mango drink to V.C.



Leader of corn group making a presentation.



Leader of the yam/cassava group making a presentation during the food week.



Leader of the rice group making a presentation.

COMMUNIQUÉ ISSUED AT THE END OF THE POST GRADUATE TRAINING WORKSHOP ON EFFECTIVE M.SC AND PH.D SUPERVISION ORGANIZED BY CEFTER AT THE GEORGETOWN HOTEL, ABUJA FROM 17TH – 19TH JANUARY, 2018.

PREAMBLE

The Centre for Food Technology and Research (CEFTER), Benue State University organized a three (3) day PG Training Workshop with the theme: “Effective M.Sc. and Ph.D Supervision”. The event took place at the Georgetown Hotel, Gwarinpa, Abuja from Wednesday, 17th to Friday 19th January, 2018.

The workshop was organized with the core objective of building the capacity of academic staff in supervision and to provide a platform for participants to exchange ideas and share experiences. The workshop drew participants across all Faculties within the University as well as Partner Institutions.

FACILITATORS

The workshop had the following renowned international facilitators who made very incisive presentations:

1. Prof. Edward Omudu - Benue State University, Makurdi
2. Dr. Robert Evans - University of Copenhagen
3. Dr. LeneMoller Madsen - University of Copenhagen
4. Dr. Sofie Kobayashi - University of Copenhagen

5. SCOPE AND COVERAGE OF THE WORKSHOP

The workshop covered a wide range of relevant topics delivered through presentations, discussions and exercises over three days comprising the following:

- * Outcomes and capabilities of M.Sc and Ph.D education
- * Responsibilities in supervision
- * Building a robust supervisory relationship
- * Motivation and self-efficacy
- * Self-assessment and competence development planning
- * Supervisory styles and aligning expectations
- * Formative feedback
- * Personal supervision plan
- * Collaboration among supervisors
- * Handling challenges in supervision



L - R: Dr. Robert Evans, Dr. Sofie Kobayashi, Dr. Barnabas Ikyo and Dr. LeneMoller Madsen

CRITICAL ISSUES RAISED AND DISCUSSED

The following critical issues were raised and discussed:

- * It was observed that no PG supervisor is trained for supervision.
- * Participants noted that the existing Post Graduate guidelines were not being implemented or strictly adhered to.
- * Again, staff who supervise PG students are often overloaded with other academic and administrative engagements which negatively impacts on supervision.
- * Based on the outcome of a survey conducted among students' feeling about their supervisors, it was observed that both CEFTER and general BSU-PG students feel that their supervisors are knowledgeable, competent, provide leadership and are supportive. However, CEFTER students feel that their supervisors are more supportive.
- * In spite of the above rating, most PG students still feel that their supervisors are not accessible, approachable or available enough. However, the most critical indices cutting across all PG students is non-approachability of supervisors.
- * Another key issue raised during the workshop was the often silence of identifying the expectation of PG students which could serve as a guide for effective supervision.

Cont. on P. 17



BENUE STATE UNIVERSITY, MAKURDI
PMB 102119, MAKURDI, NIGERIA
CENTRE FOR FOOD TECHNOLOGY AND RESEARCH (CEFTER)
ADMISSION INTO POSTGRADUATE FULL TIME PROGRAMMES

The Benue State University Centre for Food Technology and Research (CEFTER) is one of ten World Bank African Centres of Excellence in Nigeria. CEFTER is mandated to train manpower in a focused area of control of post-harvest losses.

Consequently, applications are invited from suitably qualified candidates for admissions in the new academic year of the Centre commencing from May 15th 2018

Sales of application forms is ongoing and will end (on-line) from 30th August, 2018.

Method of Application

- I. Applicants are to visit the CEFTER website www.cefterbsu.edu.ng (Under Course); click on 'application form' and complete some pre-registration information, make payment of non-refundable fee of **N10,000** online or pay at any **Fidelity Bank (ACC NO.6060310946)** using the name on their application.
- II. Applicants will receive confirmation e-mail when they have submitted the form.
- III. After payment is received, your application forms will be processed.

Candidates should endeavour to forward transcripts of their current qualification to the admission Officer, Centre for Food Technology and Research, Benue State University Makurdi.

NOTE: There are various categories of scholarships for both M.Sc. and Ph.D. courses. Female applicants have higher chances for Ph.D. funding. Scholarship forms and guide for successful application are available on the Centres website free of charge.

Scholarships are also available for non-Nigerians especially those from Countries with Bi-

lateral ties with World Bank.

The list of courses to be offered at the Centre and their entry requirements are as listed below:

COURSE: ENTRY REQUIREMENTS

1. FOOD SCIENCE AND M.Sc. programme: TECHNOLOGY

O'level credit passes in English language mathematics, chemistry, and two other science subjects. B.sc/PGD food science & and technology, chemistry, microbiology and any other related discipline to a minimum of second class lower division of not less than 3.0 on 5-point scale from a recognized university.

Evidence of NYSC/Exemption certificate for Nigerian students

PhD programme: Masters degree in Food science and technology with CGPA of atleast 3.5 on a 5-point scale. A concept proposal not less than 5pages in applicants area of specialization/interest.

2. POST-HARVEST M.Sc. programme:

PHYSIOLOGY AND MANAGEMENT OF CROPS

Five O' level credits at not more than two sittings in relevant science subjects including mathematics and English language (i.e. biology chemistry, mathematics or physics, English language and any other subject). B.Sc. Hons with second class in botany environmental sciences, Biology or Biotechnology PGD in any of the life sciences with CGPA of not less than 3.50 from any recognised University.

Evidence of NYSC/Exemption Certificate for Nigerian students.

Ph.D. Programme:

Five O' Level Credits in not more than two sittings in relevant science subjects including mathematics and English Language to qualify for admission (i.e.

Biology, Chemistry, Mathematics or physics, English Language and any other subject). Masters (M.Sc.) degree with a minimum Cumulative Grade Point Average (CGPA) of 3.50 in Botany, Environment Sciences, Biology or Biotechnology.

**3. POST-HARVEST M.sc Programme
ENGINEERING AND TECHNOLOGY**

At least a second class honours degree in: industrial Technical, Vocational Edu. & or Tech. Graduates of related disciplines in Eng., & Tech., who have in addition a PGD in Tech or its equivalent at credit level and above: Holders of, HND who have in addition obtained a PGD in Tech., at credit level and above 3rd class degree in related discipline plus PGD in Edu., at credit level. Evidence of NYSC/Exemption Certificate for Nigerian students

4. Biostatistics M.Sc. Programme:

Mathematics, English Language and any other three science (or social Science) subjects. B.Sc. (Hons) degree in Mathematics or statistics from any recognised university with a minimum of second class lower division. PGD in statistics with a minimum CGPA of 3.00 will also be eligible for admission. Evidence of NYSC/Exemption Certificate for Nigerian students.

**5. Extension And Rural M.Sc. programme
Sociology**

Five O' level credit including English Language and at least a pass in Mathematics. B.Sc./PGD sociology, with a minimum of second class lower division of not less than 3.0 on a 5-point scale from a recognised University.

Evidence of NYSC/Exemption Certificate for Nigerian students. PhD. Programme Masters degree with a CGPA of at least 3.5 on a 5-point scale. A concept proposal not less than 5pages in applicants' area of specialization/interest.

6. Analytical Chemistry M.Sc. Programme.

Five O' level credit passes in science subjects with English Language and Mathematics. B.Sc. Chemistry/industrial Chemistry or any other related discipline on a minimum of second class lower division from a recognised University. PGD in chemistry or any related field at least a minimum pass level CGPA of 3.00 on with a CGPA of at least 3.5 on a 5-point scale from a recognised University. Evidence of NYSC/Exemption Certificate for Nigerian students.

7. Food Chemistry M.Sc. Programme

Five O' level credit passes in English Language, Mathematics, Chemistry and two science subjects. B.Sc./PG in Chemistry/related discipline on a minimum of second class (Honours) lower division with CGPA of not 3.00 on a 5.00 scale. Evidence of NYSC/Exemption Certificate for Nigerian students.

PhD. Programme

Masters degree with a CGPA of at least 3.5 on a 5-point scale.

**8. Organic/Natural M.Sc. Programme
Product Chemistry**

O' level credit passes in Science subjects with English Language and Mathematics B.Sc. Chemistry/related discipline on a minimum of second class lower from a recognised university. PGD chemistry or any other related field at a minimum of 3.00 on a 5.00 scale. *Evidence of NYSC/Exemption Certificate for Nigerian students.*

PhD. Programme

Five credit passes in Chemistry, Biology, Physics, English Language and Mathematics, Academic Masters in relevant areas with CGPA of 4.0/5.0 and a dissertation score not less than 60%. Candidates with CGPA of 3.0/5.0.

**9. Food Processing M.Sc. Programme
Technology**

Five O' level credit at not more than two sittings including English Language and Mathematics B.Sc./PGD Food Science & Technology and other related discipline with a minimum of second class lower division of not less than 3.0 on a 5-point scale from a recognised university. *Evidence of NYSC/Exemption Certificate for Nigerian students*

PhD. Programme

Masters degree with a CGPA of atleast 3.5 on a 5-point scale.

10. Food Economics: M.Sc Programme

Five O' Level credit Passes which must include English Language and Mathematics and Economics. B.Sc Hons in Economic or agricultural Economics with a minimum of a second class Lower degree and a CGPA of not less than 3.00 on a Five point Scale or 2.5 on a Four point scale from a any approved university.

PhD Programme:

Five O Level Credit passes which must include English Language, Mathematics and Economics in addition to B.Sc candidates must have obtained an M.Sc degree in food Economics or Agricultural Economics with CGPA of less than 3.5. submit a satisfactory statement of intended area of research Evidence of NYSC/Exemption Certificate For Nigerian students.

POST-GRADUATE DIPLOMA FULL TIME PROGRAMMES ENTRY REQUIREMENTS

1. ANALYTICAL AND INSTRUMENTAL CHEMISTRY

- I. O'level credit passes in English Language, Mathematics. Chemistry and two other science subjects.
- II. Minimum qualification of 3rd class degree in chemistry/related disciplines from any recognised university.

2. CONSUMER SCIENCE: FOOD AND NUTRITION

- I. O'level credit passes in English Language, Mathematics. Chemistry and two other science subjects.
- II. Minimum qualification of 3rd class degree in Food & Nutrition/Home science & Mgt/Chemistry/other related disciplines from a recognised university.

3. FOOD PRESERVATION

- I. Minimum qualification of O'level Certificate with credit passes in English Language, Mathematics, chemistry and two other Science subjects.

SHORT-TERM CERTIFICATE COURSE PROGRAMME

ENTRY REQUIREMENTS

1. FOOD SCIENCE, SAFETY AND HEALTH

Minimum qualification of O'level Certificate with credit passes in English Language, Mathematics, Chemistry and two other Science subjects.

Prof. D. K. Adedzwa **Mrs. Catherine T. Bur**
 Director/Centre Leader Ag. Registrar

World Bank impressed with BSU CEFTER

A five man World Bank team on supervision to BSU CEFTER paid a courtesy call on the Vice Chancellor, Benue State University in his office.

The Vice Chancellor, Prof. Msugh Kembe welcomed the team on behalf of the university community and wished them success in their work. He expressed happiness with the visit and said Benue State University is proud to identify with CEFTER and promised to render full support to the centre.

Responding, the team leader, Prof. Mbah thanked the Vice Chancellor for the warm welcome and went ahead to intimate the Vice Chancellor of their mission.

According to Prof. Mbah, the World Bank team is in Benue State University to, among other things, assess Benue State University CEFTER so as to see whether they are performing optimally as this will enable it participate in the new phase, to interact with students on training to see if they are getting value for their money, to help the Centre improve where there are challenges and to ensure that NUC team from Abuja carry out their supervision.

He finally commended the university leadership for providing an enabling environment for CEFTER to strive.

After the assessment, the team reported back to the Vice Chancellor with their findings. The team leader, Professor Mbah commended the Vice Chancellor for proving the required leadership for the CEFTER to strive.

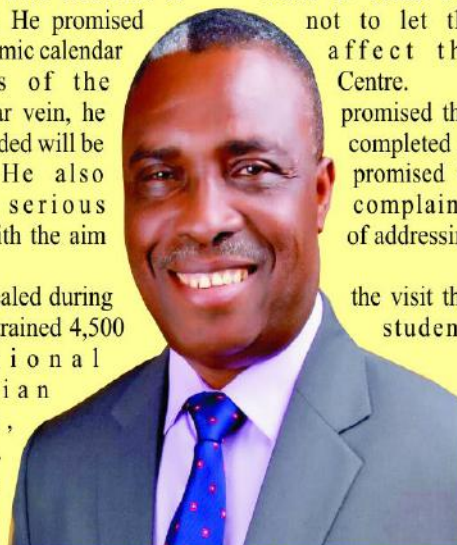
According to the team leader, the team discussed with CEFTER unit and offered their expertise on the way forward. Similarly, the team also interacted with students to ascertain whether they are getting value for their money and students agreed to it. They finally commended CEFTER in the discharge of their duties and advised that the loopholes should be looked into.

In his final response, the Vice Chancellor thanked the team for a job well done, appreciated their inputs and promised to work closely with CEFTER to make it better than other Centres. He promised not to let the unstable academic calendar affect the programmes of the Centre.

In a similar vein, he promised that contracts awarded will be completed in due time. He also promised to look into serious complaints by students with the aim of addressing them.

It was revealed during the visit that short courses trained 4,500 students

200 Regional
 Cameronian
 Refugees,
 M . S c .
 enrolment are
 363 while
 Ph.D has 90
 enrolment.



Prof. Msugh Kembe, BSU VC

CEFTER BSU trains 200 Cameronian refugees in basic food nutrition, food handling and hygiene

The Benue State University Centre for Food Technology and Research (CEFTER), has trained about 200 Cameronian refugees at Utanga, Amana and Ranch communities along Cameroon – Nigeria border in Cross River State.

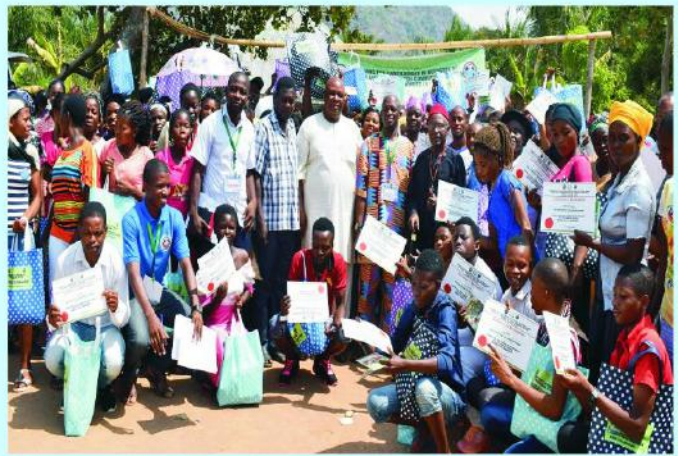
The training which took place from the 27th February to 3rd March 2018 involved 40 hours of intensive training of the refugees including males and females in the aspects of basic food nutrition, food handling and hygiene. Practical training in grain packaging using PICS bags, soya milk preparation as well as preservation of tomatoes were major aspects of the training.

In a speech to declare the occasion open, the Centre Leader, Prof Daniel Adezwa who also represented the Vice Chancellor of Benue State University, Prof Msugh Kembe said the university was in Obanliku to identify with the refugees on their plight and the circumstances that forced them into Nigeria causing them untold hardship. He stressed that, the training is to inculcate into them relevant skills in safe food preparation and preservation to minimise complicating their situation with unhealthy food practices that could lead to foodborne diseases. He informed that, so far, more than 4, 500 people across Benue State have benefited from similar training and as such encouraged the participants to give in their best in the course of the training. He expressed the Centre's willingness to empower and support them to adapt to their situation under healthy and manageable conditions until the situation improves for them to return to their home country.

Also commenting, the Project Manager of CEFTER, Dr Barnabas Ikyo expressed appreciation to the government of cross rivers and the entire community for opening the doors of their community to allow them train the refugees. He reiterated that the objectives of CEFTER was to find ways of controlling post-harvest loses that usually plague farmers in the West and Central Africa sub regions. He maintained that the constant losses of food after harvest due to lack of effective storage and preservative methods is a setback to development efforts;



Processing hygienic soyabean milk.



A cross section of participants and CEFTER team.

attracting concerned bodies such as the World Bank in choosing BSU as one of the Centres to offer the requisite training of manpower to curtail these losses.

Earlier in their welcome addresses, the Clan Head of Becheve, Chief Onom C.E. Akor as well as the representative of the governor of Cross Rivers State Mr Daniel Okonu who is the Community Relations Officer of Obanliku Local Government Area welcomed the team to Amana informing that, while so many non-governmental organisations including SEMA have been on hand to offer assistance to the communities offering shelter to the refugees from the Cameroon, more assistance is required to manage the large number of these refugees. They stressed that, food, water and health care as well as other essential commodities are in great shortage, thus causing unhealthy living for both the members of the community and the refugees. They welcomed the presence of BSU CEFTER assuring them of the community's support and hospitality.

In a vote of thanks, the Deputy Director Research and Collaboration of CEFTER, Dr. Sylvester Adejo expressed warmest appreciation to the community for their show of hospitality during the entire course of the training. He also gave kudos to the participants for coordinating themselves well and giving their best to the training. He advised them to make use of skills acquired to enhance their standards of living.

Responding, some of the trainees expressed appreciation to CEFTER BSU team for giving them such wonderful training to improve their living conditions. They admitted acquiring so much which they promised to put to use especially by starting a small scale business even when they eventually return to their country. For immediate benefits, the participants promised to adhere strictly to the healthy cooking practices as well use acquired knowledge of food nutrition to make good use of the little food available to them to enhance a healthy living.

Highlights of the event was the award of certificates to participants as well as the distribution of food items such as rice, Maggi and salt as well as detergent.

- * Inability of supervisors to build self-efficacy of students

OUTCOMES AND CAPABILITIES

After all the presentations, discussions and exercises, spanning the 3 days of the workshop, the following key outcomes stood out from the training:

- i. Participants were able to identify their supervising styles
- ii. Participants were able to develop their own supervision plan.
- iii. Participants learnt ways of building a robust relationship with students
- iv. Participants learnt how to identify expectations of PG students and how to work towards meeting these expectations.
- v. Participants were equipped with tools to motivate and help enhance the self-efficacy of students
- vi. Participants were exposed to ways of giving formative feedback to support students learning process.
- vii. Participants learnt strategies to enhance critical thinking in their students that will help them solve problems and make meaningful contributions to the society.
- viii. Participants have been provided with motivational models, knowledge and strategies which will help enhance their supervisory skills to bring out the best in PG students especially and the society as a whole.
- ix. Participants learnt strategies for working with co-supervisors.

LEVEL OF PARTICIPATION

Participants for the workshop were drawn across all Faculties of BSU; all Departments of CEFTER; ten (10) participants from University of Agriculture, Makurdi; one participant each from Akperan Orshi College of Agriculture, Yandev, University of Mkar, Mkar and NSPRI Illorin.

The workshop commenced with a plenary session involving all participants, after which the house was divided into syndicate groups for group discussions and exercises.

During the various sessions, there was active and robust participation by all the participants.

It was noted that the social constructivism approach adopted by the resource persons really engendered the full interaction/participation of the participants. Both electronic and hard copies of all the workshop materials were promptly made available to participants.

RECOMMENDATIONS

After the three day workshop, the following recommendations were made for the consideration of the University management:

- i. Special training for all lecturers involved in PG supervision
- ii. In view of the richness of the content of the workshop, the PG supervision training should be stepped down at the Faculty level as the university may please.
- iii. The university should encourage the full implementation of the PG guidelines
- iv. The Post-Graduate Quality Assurance Committee should monitor and evaluate students' admission, progress and graduation timeline.
- v. The mode of admission of PG students especially Ph.D students should be reviewed
- vi. The university should insist on progress evaluation report every semester from Departments and the Departments from supervisors.



A cross section of participants during the training.

More efforts from govt. towards post-harvest losses - Ugbaha Anyebe

Post-harvest losses are chain and or series of events responsible for the unavailability or unwholesomeness of food and food materials and this is usually from harvesting, packing, sorting, transporting, processing, storage and to cost effective marketing. However, pre-harvest operations are also critically looked into that leads to biological causes of losses (insect attack, microorganisms, rodents etc.) which occurs right from the field. In Africa, it is estimated that about 50% of foods produced (more than 51.3 metric tons) are lost with fruits and vegetables experiencing more than 50% of the losses due to their perishable nature and are mostly cultivated in the rural areas where there are no accessible roads.

Post – Harvest procedures	% Losses
Harvesting -----	66.7%
Handling -----	38.1%
Storage -----	90.5%
Processing -----	71.5%

It is established in Nigeria that the monetary value of post-harvest losses have risen to over \$8.6 to \$9.0 billion annually (#2.7 to #3.1 trillion) which is almost #3.9 trillion which the education sector paltry gets out of the #55 trillion allocated to it from 2008 to 2018 (10 years) attributed to Government budget deficit.

Currently, there are about 12.9 million hungry people in Nigeria and out of which 37% are children under the age of 5.

Invariably, we have a subtle, silent and serious problem in the country if post-harvest losses concerns are not addressed. All efforts by the government towards food sufficiency by provision of loans, fertilizers and other inputs, improved seeds eventually amounts to work in futility because of the amount of losses after bumper harvest.

Efforts from research are however put forward to reduce losses

after harvest and this starts from planning down to the Market. Also, costs benefit analysis to determine the return on investment in the recommended post – harvest technologies, selection of technologies that are appropriate for each post – harvest handling procedure.

As cold compartments tend to be the most effective but expensive, farmers are encouraged to apply indigenous technologies developed for their harvesting (maturity indices, appropriate time of harvesting), processing and storage (well ventilated areas free from insects, rodents and birds). Government to invest more in post – harvest research (as against the only 5% dedicated), fix and construct roads to areas where bulk of the food is produced (rural areas), and to maintain and improve on storage facilities to minimize spoilage during surplus.

Minimizing post-harvest losses of food is an effective way of increasing food availability and ensuring food security in Nigeria, balanced diet among children, and creation of wealth among farmers, those engaged along the agricultural value chain and Nigerians in general.



**Ugbaha Anyebe, M.Sc
Post-Harvest Physiology
& Mgt of Crops**

My Experience - Ochoyo Ogwola



In the world over, Post-harvest Losses (PHLs) occur in all kinds of crops at every stage of the post-harvest value chain. It is highest among fruits and Vegetables (up to 50%) followed by roots and tuber crops (about 30%) while grains record the least (about 12%) PHLs. Until now only five percent (5%) of agricultural research funding is directed towards PHLs globally.

My experience at the ACE, CEFTER BSU, proved that PHLs of any category of crops can be reduced significantly with the application of various principles and strategies/methods. These principles and strategies/methods span throughout the PH value chain of crops, starting from taking note of maturity indices as a pre harvest practice.

Maturity Indices: Note should be taken to study the maturity indices of any crop before harvest. This helps to extend the shelf-life of such crop or crops in question.

Harvest and Handling Practices: Practices that avoid inflicting injuries on crops, especially Fruits, Vegetables, Roots and Tubers

should be adopted. Injury-free crops do store longer than crops harvested with injuries. Hence reducing PHLs and increasing the shelf-life of such crops requires harvesting them injury-free, coupled with careful handling.

Transportation: Harvested crops should be transported in appropriate vehicles and moved carefully across distance to avoid injuries and outright damage. Fruits, Vegetables, Roots and Tubers should be conveyed in padded containers and/or vehicles in order to help achieve this objective.

Storage: Storage of harvested crops should be done in well ventilated cool and dry place help to prevent rot due to heat. Also, storage facilities that are animal tight (especially rodents) help to reduce PHLs due to animals feasting on the crops and contamination with Urines and Faeces.

Processing: Processing helps to add value to crops as well as reduce the PHLs of crops. All crops have enhanced value and increased shelf-life, especially fruits and vegetables which store better when processed into finished products.

Written by **Ochoyo Godwin Ogwola.**

Dept. of Rural Sociology and Agric. Extension

chemists and they are also developing processing techniques that would prepare foods in such a way that could store for longer and would be hygienic for a long time. So these are the various ways in which we're tackling this problem. And by doing these we are collecting data and publishing just like I told you earlier most of the successive articles that we publish are from work that have been generated in the past four years here and out of that 28 of them have been shown to be of international standards.

Q: Has CEFTER'S collaboration with its partners been fruitful in any way?

A: Very very fruitful. We have two sets of partners we have one we call the institutional partners which are BNARDA, NISPRI and UAM. They are also interested in some aspect of Food Losses and most of these institutions have academic staff that also assist us in teaching students in our various laboratories. In addition to that because we are deficient in the laboratories in the department of chemistry and Biological Science, we sent our students to their labs to conduct research. Now that's one aspect of the partners that we have. Then you have industrial partners like TERAGO that process fruits. You have Agudu Farms that process mainly tubers, then you have SERAPH Oil that process oil. We expose our students to these industries so that they go and learn from theory to practice how this food is processed industrially on a large scale because in the industrial level once food is processed, it can stay on the shelf for many many years. So they learn all these in the lab and they apply some of these on the micro scale during the Food Week when they practice what they have learnt in the industry and in the classroom. So that this knowledge would be available even to the local farmer. But we believe that we we're not only at this cottage level of production we think that the graduates we're producing here will even try to set up their own industry so we have to expose them to this big scale industries. So those are the two sets of industries we have and the experience like I told you has been very wonderful, and they have been very co-operative. We send our students to these industries for three months after they have finished their course work and they go through the whole cycle of either processing tubers from the raw form up to the processed form.

Q: How have the activities of CEFTER impacted the University Community?

A: CEFTER has made tremendous impact on the University. We have made sure that the University feels the impact of the

Centre. First and foremost all the programs we have here are domiciled in the departments. So it is the Head of Department



CEFTE BSU, Makurdi

BSU signs MOU with University of Copenhagen, Denmark

On the occasion of the signing of Memorandum of Understanding (MOU) with University of Copenhagen, Denmark for training of lecturers on innovative teaching techniques.



L - R: Sagir Abbas, DVC Academics, Bayero University Kano, Nigeria, Prof. Moses Msugh Kembe, VC BSU Makurdi, Nigeria, Prof. Hanne Aderson, HOD Science Education, University of Copenhagen, Denmark and Dr. Barnabas Ikyo, Deputy Centre Leader, CEFTER, BSU Makurdi, Nigeria.

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