

MAKERERE UNIVERSITY
COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES (CAES)

PRINCIPAL'S 1ST QUARTELY REPORT (SIX MONTHS)

AUGUST 2013 – MARCH 2014

Foreword

This report is the 1st Principals Quarterly Report presenting the major activities and achievements in the College of Agricultural and Environmental Science (CAES) for six months covering the period between August 2013–March 2014 . The report covers the strategic areas as outlined in the University strategic areas including Teaching and learning, Research and Innovations, Resource mobilization and Outreach activities. A section on Human Resource and career development is also included.

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Abbreviations

CAES	College of Agricultural and Environmental Sciences
CEDAT	College of Engineering, Design and Art
CHS	College of Health Sciences
CoBAMS	College of Business and Management Sciences
CoVAB	College of Veterinary Medicine, Animal Resources & Bio security
DEM	Department of Environmental Management
DRGT	Directorate of Research and Graduate Training
EU	European Union
MAK	Makerere University
MUARIK	Makerere University Research Institute Kabanyolo
MUBFS	Makerere University Biology Field Station (MUBFS).
NAADS	National Agricultural Advisory Services
NARO	National Agricultural Research Organisation
NBDB	National Biodiversity Data Bank
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SAS	School of Agricultural Sciences
SFEGS	School of Forestry, Environmental and Geographical Sciences
SFTNB	School of Food Technology, Nutrition and Bio engineering

1.0: TEACHING AND LEARNING

1.1: 31 Agriculture students flagged off to Israel for paid internship

President Yoweri Museveni flagged off 31 students to Israel on a one year paid internship. 26 students were second years undertaking BSc. Agric and BSc. Horticulture from the College of Agricultural and Environmental Sciences, 3 graduates from the same college and 2 students from Busitema University.

The President was represented by the Minister of Education and Sports Jessica Alupo at a colourful ceremony held at the CoBAMS, Conference room on October 3, 2013.

In his speech, the President pledged to reward students who will work hard, save and come back with a business plan. He promised that each student who will attain a 75% mark at the end of this internship and save some money, government will match it from the Youth fund in a ratio of 1:2.

“If you attain at least 75% mark and save equivalent of USD 1000, we shall match it by USD 2000 or equivalent so that you start your agribusiness or commercial farming enterprise. If you save USD 2000; we shall match it with USD 4000 as start up capital for your agribusiness. This way, I want you to become the “seeds” of my agricultural transformation in Uganda”, The President promised.

President Museveni also extended appreciation to the government of Israel through Ambassador Gil Haskel and his staff for their commitment to support Makerere University's partnership with Israel's universities, the private sector and other institutions towards promoting and scaling up the Presidential initiatives in Makerere University.

In her personal remarks Education Minister Jessica Alupo told students that they were going to interact with very high skilled people who share knowledge without reservations. She advised students to exhibit a high level of discipline and always remember that they are not only the ambassadors of Makerere but also flag bearers of Uganda.

She pledged to clear the outstanding bill of about USD 6000 to clear air tickets for students who were unable to raise money for their air tickets and would have missed the opportunity. Out of 31 students, 26 had cleared their bills while the rest had already lost hope. The Minister requested the university to write a letter asking for support and submit to her office immediately before she leaves the country that very day.

The Chancellor Makerere University Prof. Mondo Kagonyera reiterated the

minister.s call to students to remain disciplined. Prof. Kagonyera expressed gratitude for the sponsors saying, he had no doubt of the students intellectual capacity and readiness to put in practice what had been learnt.

The Professor proposed the need for government to bring all stake holders in education including the executive, parliament, civil society, private sector in a dialogue to find a cure for the despondence of the teachers. The chancellor further advised government on the universal education system as not yielding much.

Prof. Kagonyera also expressed concern over the exemption of Ugandan men from paying graduated tax saying, since government cannot afford these burdens; it was time for revolutionaries to say the policy is not good. “Is it right for a man to wake up every morning , does not pay tax, does not pay school fees and even health bills if he has the ability to work? I think it is not correct to leave most of the men irresponsible. If they worked for a tax, they can even afford to buy a gomesi for their wives”

Prof. Kagonyera observed that the frequent teachers. strikes and other chaotic situations in the country were symptoms of underlying causes that calls for a national dialogue and a revised national policy.

The chairperson Makerere University Council Dr. Wana Etyem described the send off as an important function that will yield the manpower that will improve agricultural productivity. Eng. Wana Etyem observed that the biggest challenge in the country was organising the workforce to do the right things at the right time.

Dr. Wana Etyem wished the students the best of their internship requesting them to utilise the opportunity productively and come back home to help Ugandan farmers improve their livelihoods.

The Council chair also thanked the Minister for supporting the university during the trying moments and prayed that the minister will continue engaging government to solve the most challenging issues of Makerere.

“Please support us to address our long term challenge as far as the wage bill is concerned. We do hope that you will dialogue with relevant organs to convince government take over the university wage bill”. The chairman appealed.

Speaking on behalf of the Vice Chancellor, the Deputy Vice Chancellor in charge of Finance and Administration Prof. Barnabas Wanangwe underscored the role of Makerere as a great African University that has given birth to other universities and will remain the most single important institution in Uganda that require special attention.

Prof. Nawangwe said the University had become a centre of attraction and a big

collaborator with international institutions and has generated a lot of technologies and innovations that have improved people's livelihoods. He implored the students to keep the name of Makerere.

“As a University, this send off is very important. Please keep the name of Makerere. Get the knowledge and skills and come back home and implement them” Prof. Nawangwe advised.

He expressed gratitude to the government of Uganda and the President for the support given to Makerere during the recent difficult times and assured the minister that the university was open and calm. He asked the minister for continued support to engage government take over the wage bill and also help it cover the debts.

Speaking on behalf of the Principal College of Agricultural and Environmental Sciences, Deputy Principal Prof. Goretie Nabanoga described students and lectures as a lucky group flagging off Makerere as Uganda to Israel for the first time.

“You should take this course seriously because you are flagging off Makerere and Uganda. Give that image that Makerere deserves of Uganda. Be good spies outside. When you come back, we have space in Kabanyolo to put in practice what you have learnt”, The Deputy Principal promised and expressed optimism that government had the will to support the graduates through the Youth fund.

The Dean School of Agricultural Sciences represented by Head Department of Agricultural Production Dr. Denis Mpairwe said, this was part of the internship program conducted at the university and expressed confidence that students will perform well. He advised students to go for practical training and acquire as much skills as they can. He thanked the Senate for approving the program.

He appealed to government to help support such programs saying, most of the students who succeeded came from very poor families that cannot even afford an air ticket. This, he said could be done by providing soft loans so that students go as products of the nation.

Makerere University this year signed a memorandum of Understanding to be part of the the Israel Agrostudies International Internship program. This was the first time Makerere University and Uganda as a country is taking part in the program. The program has been running for the last nine years concentrating mainly on developing countries in Asia and Latin America. It was introduced in Africa in 2012. Other African countries taking part are Rwanda, Togo, Ivory Coast Burkinafaso and Kenya.

The objectives of the Israel Agro studies internship program are to enhance student's theoretical education and practical skills, on actual agricultural production system and expose students to modern ways of farming.

The program is an 11 month paid apprenticeship. Israel government gives students a comprehensive medical insurance for the entire period of internship. The students receive a salary for the work they do on the farms and the farm caters for their accommodation and upkeep in Israel. In addition each student receives a laptop.

After every course, there is an exam in which the student gets a grade. The Agro-studies assess the student.s performance both in the field and theory and awards a diploma from Agro-studies and Ministry of Agriculture at the end of the internship.

1.2: CAEC handed over to the Department of Extension and Innovation Studies

On October 11, 2013 the college handed over the Continuing Agricultural Education Centre(CAEC) located at Kabanyolo to the Department of Extension and Rural Innovations.

The meeting was attended by Prof. Johnny Mugisha (Dean SAS) Ms. Kevin Nabiryo (HR/ Admin Assistant/Ag. Principal) Prof. Jacob Agea (DEIS Incoming Coordinator CAEC), Assoc. Prof. Paul Kibwika (Chair DEIS), Mr. George Turyamureeba (Internal Auditor) Dr. Fred Kabi (Outgoing Coordinator CAEC), Mr. Godfrey Kasuja (Technician DEIS), Ms. Jane Anyango (PRO CAES) and a number of CAEC staff.

As Chairperson, the Dean School of Agricultural Sciences Prof. Johnny Mugisha, reported that Dr. Kabi Fred had been custodian to the centre for the past eight years. Formally, the centre was under the then Faculty of Agriculture but with the University's transition into colleges, the centre was placed under DEIS and therefore a requirement for the department to manage it.

Prof. Mugisha said the implementation of the centre activities would be done by DEIS.

He also gave the history and management of the centre saying Dr. Kabi Fred took over to fill the gap that was created when staff went for further studies. He thanked Dr. Kabi Fred for the flexibility and good management of the centre.

The Dean pointed out that under the new college structure, CAEC falls under DEIS which is headed by the Chair under the School of Agricultural Sciences headed by the Dean who is under CAES headed by the Principal and that whoever takes over CAES reports directly to the Chair DEIS who reports to the Dean and finally the

Principal unlike the past, where the Acting centre Coordinator reported directly to the Principal.

In his hand over report, the outgoing Director, Dr. Fred Kabi reported that he had

been managing the centre since 2005 and thanked CAES, Faculty of Agriculture and DEIS for entrusting him to have custody of the institution. He pointed out that the centre operated without a driver, security guard and accountant.

He read a sixteen (16 – paged) handover report containing the history, objectives, vision, mission, mandate and goals of CAEC; highlights of the major successes, challenges, management structure and staff, infrastructure development and services needed at the centre. He also read the long term goals to improve service delivery, major activities, Finance and books of accounts.

Dr. Kabi thanked the college for giving him the opportunity to learn as he serves pledging his continued availability and collaboration with the new management.

He then handed over the instruments of power that had been given to him by outgoing Coordinator to the new centre departmental coordinator Prof. Jacob Agea.

1.3: Israel Asks for More Students for the Agro-studies internship program

The State of Israel requested Makerere University to send another ten (10) students for the life-changing one-year agro-studies apprenticeship programme. The program coordinators including Prof. Samuel Kyamanywa, Dr. Denis Mpairwe, Mr. Agaba Isa and the Vice Chancellors Office worked to see that the requested number leaves within December 2013.

The request was due to the outstanding and exceptional performance of the first bunch of the students. The Minister of Education and Sports Jessica Alupo, representing H.E The President of Uganda, flagged off the first group of the students to Israel on October 3, 2013.

26 students were second years undertaking BSc. Agric and BSc. Horticulture from the College of Agricultural and Environmental Sciences, 3 graduates from the same college a few years ago and 2 students are from Busitema University.

News from Israel indicated that Makerere students were divided into two groups and sent to two farms. 21 students were deployed at Pri-or Meadrine Farm located in Mefelisim in the Negev desert Southern Israel and the other 10 at Tsarfati Farm in the North of Tel Aviv.

The students reside in a rented bungalow paid by the farm owners and as part of their training, they are provided food to cook for themselves, pack and eat from their place of work to avoid time wastage.

Makerere Brand and Marketing Manager Agaba Issa Mugabo visited the students. In addition to food and accommodation, he said students were given uniforms, shoes, gumboots, t-shirts, jackets and other essential farm items to make their work easy

and comfortable.

This was the first time Makerere University and Uganda as a whole sent students for this Isreal Agro studies paid internship. Only boys went because of accommodation issues but arrangements had been finalised and next year, female students will be included.

Agro-studies brings students from South Asian, Latin America and African countries including the Philippines, Peru, Myanmar, Laos, Cambodia, India, Vietnam, Rwanda, Togo, Borkina Faso, Kenya, Malawi, and Ivory Coast among others.

1.4: The Joint Field - Based Module for ARI and AgTrain PhD training Launched

The Department of Agriculture Extension and Innovation Studies launched a Joint Field- based module for the Regional PhD program in Agricultural and Rural Innovations (ARI) and Agricultural Transformation through Innovations (AgTrain) from January 9-24, 2014.

The University won a grant from African Caribbean and Pacific-European Union Co-operation Program in Higher Education (EDULINK II) to implement a regional PhD programme ARI in collaboration with a similar European –based PhD program AgTrain.

The partners of the project entitled, “Strengthening Human Resource Capacity to Foster Agricultural and Rural Innovations in Eastern Africa”, include Egerton University in Kenya and Sokoine University of Agriculture in Tanzania, Wageningen University of Netherlands, Agreenium in France, University of Copenhagen in Denmark and the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM).

The Joint Field -Based module was officially launched on January 9, 2013 at the Continuing Agricultural Education Centre (CAEC) located at the Makerere University’s Research Institute Kabanyolo by the Deputy Principal College of Agricultural and Environmental Sciences Dr. Gorette Nabanoga. The function was also attended by representatives from World Vision Uganda, RUFORUM and course instructors from partnering Universities.

The program attracted students and instructors from 20 countries including Uganda, Kenya, Bangladesh, Ethiopia, Tanzania, Mexico, Germany, Croatia, Peru Mauritius and Serbia. Others are Uruguay, Malaysia, Phillipines, Albania, Guatemala, Sudan, Zambia, USA and Italy.

41 ARI and AgTrain PhD students and 12 coordinators from the partnering universities, interpreters and guides were dispatched from Makerere University on Sunday January 12, 20 to Nkonzi Sub County in Mpigi district to conduct surveys in two parishes of Ggolo and Nindye for two weeks.

The Project co-ordinator Makerere University Dr. Paul Kibwika described the program launch as memorable and a unique opportunity of the realization of the concept of developing and implementing a regional program saying, the linkage of the two programs was to share experiences and capacities.

Two experts in filming from France Pierre Arragon and Mailys Luye were part of the group to transform the students' field experiences in the development of an E-learning resource for the two programmes .

The major activities for the students included moving to the different villages in groups to collect, analyze and present data. Field Instructors debriefed the students, critiqued and synthesized data offering recommendations on better research skills.

1.5: Over 400 graduate from the CAES at the MAK 64th graduation Ceremony

Over 400 students from the CAES were conferred degrees and awarded Diplomas at the Makerere University's 64th graduation ceremony held on Thursday January 30, 2014. This day was dedicated to the College of Agricultural and Environmental Sciences; the College of Education and External Studies; the College of Engineering, Design, Art and Technology; and the School of Law with a total of two thousand four hundred and eighty eight (2488) candidates graduating.

The Principal, Prof. Bernard Bashaasha assisted by Deans presented 10 graduands for conferment of PhDs in Plant breeding and Biotechnology and two PhDs in Agro forestry. Others were 81 candidates conferred upon the Master degrees and over 300 with Bachelors degrees in various disciplines.

Speaking during the function, the Vice Chancellor Makerere University Prof. John Ddumba Ssentamu congratulated graduands upon this achievement and thanked parents for the financial and moral support. He also extended his appreciation to Makerere staff for the dedicated service, playing a positive role in the development of the human resources in the country and ensuring that the university remains on course.

Prof. John Ddumba Ssentamu said the University continues to rise in its ranks with the current ranking being 4th in Africa. He attributed this success to the research, publications and innovations as well as support from government and other development partners and donors.

The Vice Chancellor described CAES as one of the vibrant colleges that has over the years established itself as a regional centre of excellence in agricultural and environmental research. He enumerated newly implemented and proposed programmes including the Regional PhD in Agricultural Rural Innovations (ARI),

the Master of Science in Watershed Management, the Bachelor of Science in Meteorology, the Masters course in Disaster Risk Reduction and Management (DRRM), Masters program in Climate Change and Sustainable Development, Bachelor of Science in Geography, Bachelor of Science in Water and Irrigation Engineering, Bachelor of Science in Bio-process Engineering, and a Training Programme for Plant Doctors among others.

He encourage students to strive for greater success and exercise patience as they strive for success and appealed to the Alumni and friends of Makerere University to generously support the construction of the Students' Centre..

The Chancellor Makerere University, Prof. Mondo Kagonyera expressed appreciation for the teaching and training of young men to cause change in society. He described Makerere as the Harvard of Africa manifested by the victory of her staff and graduates in winning awards against renown mightier universities and coming up with innovative programs that are of benefit to society.

Prof. Kagonyera however observed that for staff to remain innovative and create wealth, the University should strive to develop facilities at their disposal like the valuable land in Katalemwa, Makindye , Katanga and Kabanyolo to produce resources.

The Chancellor also appealed to the alumni to passionately contribute to the development of Makerere University saying, it is the only one without a students. center, “ I appeal to the old alumni and students graduating today to continue to be interested in the affairs of Makerere. Your involvement in the development of Makerere can play a critical role”. He said

Professor Kagonyera appreciated government support to research and its commitment to ensuring peace and security within the country and the region. He also reiterated his call on government to take on the staff wage bill.

The Chancellor also observed that unemployment was not unique to Uganda but a worldwide problem that requires collective responsibility from both the public and private sectors to find a solution.

He advised graduands not to fix their minds on what they have studied but rather engage in other endowments to be job creators and not seekers., “You may have got a degree in History but there is no excuse why you cannot be an expert in designing... the future of Uganda depends on you and you are going to decide whether Uganda is prosperous or poverty stricken”. Prof. Kagonyera advised.

He encouraged graduands to be disciplined cautioning them against selfishness or corruption saying, it ruins peoples. minds and impacts negatively on productivity.

Presiding over the graduation as Chief Guest in his private capacity as a parent who had come to witness her daughter graduating, the Vice President of the Republic of Uganda Edward Ssekandi thanked Makerere University team for shaping children into an empowered people to go and shape the country.

The Vice president described the liberalization and Universalization of the education system as both a blessing and a challenge on the job market. He said, the problem of unemployment was not due to lack of job openings but the lack of relevant skills demanded on the job market.

VP Ssekandi urged students to be job creators and look beyond the Ugandan market to other African countries and beyond, “As educated people make Vision 2040 a reality, maintain physical fitness and fight a number of diseases. The country shall rely on you for promotion of unity and fostering the spirit of East Africa”, As Rotarian the Vice President commissioned graduands to service before self.

The four day graduation ceremony started on January 28th and ended 31st. A total of twelve thousand six hundred and sixteen (12,616) candidates were awarded degrees and diplomas. 50.3% were female and 49.7% were male. A total of 51 candidates of which 23.5% were female and 76.5% male, graduated with doctorate degrees in different disciplines. 244 candidates graduated with First Class degrees and of these 38.5% were female and 61.5% male. One thousand one hundred and ninety two (1192) graduated with Masters degrees of which 38.4% are female and 61.6% male.

1.6: CEO Israel Agro studies program visits CAES

The Chief Executive Officer Israel Agro-studies program, Yaron Tamir finally accepted to take Makerere University students finalising their studies for the 11 months internship in Israel starting with the third batch. The first batch is currently in Israel while the selection of the second batch is in its final stages.

Under the current understanding with Israel Government, only active second year students were supposed to go for the internship to minimise chances of staying back in Israel.

The academic system at Makerere allows students to go for internship in their second year for two months. Under the Israel collaboration, the university had to grant a full dead year to the students to finish the internship. This meant that students lose a whole year, come back and start where they stopped.

In a special College Academic Boarding meeting to discuss the Agro-studies internship program held on March 3, 2014, members observed that the program was

advantageous as it provides opportunity for practical training that would produce the best farmers.

Members however noted that the program was interfering with the University system by prolonging programs by one year. It was also noted that as second year students come back from Israel and continue with their program in third and fourth year, they would forget most of the skills acquired. It was therefore proposed that the final year should be dedicated for that internship.

In a meeting with management of the College of Agricultural and Environmental Sciences and University staff on Tuesday March 25, 2014, Israel Chief Executive Officer Agro-studies Internship Program Yaron Tamir heeded to the request to take final students for internship in Israel but with conditions.

Flanked by Inbal Shoal, the CEO explained that the reason Israel was insisting on taking active second year students was mainly to avoid students staying back in Israel that would jeopardise the goal and objectives of the initiative.

He said the objectives of the Israel Agro-studies internship program are to enhance student.s theoretical education and practical skills on actual agricultural production system and expose students to modern ways of farming so that when they come back, they act as ambassadors in commercial agriculture, establish model farms at the University and communities, create jobs for others and demonstrate that a farmer can be rich, thereby contributing to food security and economic development of their country.

Yaron Tamir said Israel was willing to take on finalists on condition that any attempt by a student to stay in Israel after the internship, will automatically lead to the cancellation of the entire University from the program. He tasked the University and parents to take lead in sensitizing students not to stay in Israel after their internship.

“The University should freeze their degrees and diplomas until they come back. We don.t want them to stay in Israel. If one student stays, we will have a dramatic situation. The parents should call their children and tell them not to stay in Israel”, The CEO warned.

Yaron hailed Makerere for grooming hard working students who are a darling to Israel farmers. “We thank you for the wonderful job of screening very good, hardworking and disciplined students. This was the main reason why we are willing to take 120 students”, He stated.

He said Israel was doing all it takes to equip students with practical skills by adding value to the theory obtained at Makerere and combining it with technology. “ Israel as a country we don.t have water, land and manpower is very expensive. We have

only 2% of the labour force engaged in farming but we are able to feed the whole population and export to Europe because of technology”, he said.

The Principal College of Agricultural and Environmental Sciences Prof. Bernard Bashaasha thanked the Israel executives and Makerere University Office of the Vice Chancellor for initiating the program and choosing the College of Agricultural and Environmental Sciences in particular for the collaboration.

The Principal hailed Israel for her technological advancement having turned a desert into agricultural productivity describing it as a wonder. He observed that although Uganda is endowed by natural resources, not much has changed in terms of production.

Prof. Bashaasha reported that the college was excited about the program and was happy that one of the issues of timing of the internship program had been amicably resolved. The Principal assured the Israel executives of the availability of the University farm at Kabanyolo and expressed optimism towards receiving graduates from Israel to implement what would be required.

On the October 3, 2013 a group of 31 second year students of BSc. Agriculture and Horticulture was flagged off to Israel by Education Minister Hon Jessica Alupo for one year internship in Israel. Additional 10 students followed in December after satisfactory performance by the first batch.

This year, Agro-studies has increased the number to 120. Besides BSc. Agriculture and Horticulture, the internship has been opened up to accommodate BSc. Agricultural Engineering, BSc. Land Use, Agribusiness Management and BSc. Agriculture and Rural Innovations.

2.0: HUMAN RESOURCES

2.1: CAES Substantive Principal Takes Over Office

On August 1, 2013, the former Ag. Principal CAES Prof. Samuel Kyamanywa handed over office to the Substantive Principal Prof. Bernard Bashaasha. The handover ceremony was moderated by the Deputy Principal Dr. Gorettie Nabanoga at the conference hall, School of Agricultural Sciences. It was attended by the college and University staff including representatives from the Directorate of Internal Audit and that of the Human Resources.

Outgoing Ag. Principal Prof. Samuel Kyamanywa presented a 27 paged handover report with 15 Appendices. Both the Outgoing and Incoming Professors stood up and exchanged instruments of power including eight documents namely; the document from the Esella retreat (31st May-2nd June, 2011), document for the proposed relocation of the college to Kabanyolo (dated February, 2012), a report on CAES Major Achievements (2005-2011) and a copy of the Makerere University budget 2013/1014.

Other documents were the CAES Technologies and Innovations catalogue 2013, a copy of the College Statute of 9th March 2013, the Makerere University Organizational Manual and a copy of Makerere University Research Manual. There was also an exchange of office keys, two electronic gadgets, a file with two TOTAL fuel cards, hugging and switching seats.

In his remarks, the incoming Principal Prof. Bernard Bashaasha described the moment as an important milestone in the history of CAES. He thanked the outgoing Principal for steering the college at the time of the University transition from the Faculty system into Collegiate.

“I thank the outgoing Ag. Principal for his leadership and for laying the foundation of the college on which I promise to continue to build. I also thank the previous leaders for their contributions.” Prof. Bashaasha said.

Prof. Bashaasha thanked God for the opportunity to serve and reminded those present that all leadership comes from God. He pledged to serve and work together with everybody to address CAES challenges, “I realize the gravity of the challenges ahead of us and I consider serving as your Principal as servant ship that I accept with humility. I thank you for turning up in big numbers. I had not seen such large numbers at previous handover ceremonies. I am greatly humbled by your presence and your interest in the affairs of their college”.

Prof. Bashaasha reiterated CAES potential in terms of immense and talented human resources, physical resources and infrastructure, current national development needs and the strategic position of agriculture, forestry, the environment and food in

the African and the global economy.

He pledged to be a Principal for all and implored all staff to join hands to build a better CAES saying, the door to the Principal's office is wide open for business or a chat.

“I extend an open hand to all-those present and those absent. I ask that we should all focus on the future of the college with optimism. The college has a number of challenges that can only be successfully addressed by us working together. We need each other now than ever before.” The professor appealed.

Prof. Bashaasha reiterated his campaign promises of transparency and humility and promised to be guided by them to move forward. He reminded members that he does not know how to pretend and requested all to revisit his manifesto-drawing attention to the abridged version.

He reported that his starting point would be the improvement of academic standards, consolidation of research achievements, improvement of staff welfare and implementation of a decentralized college management system.

Prof. Bashaasha also said that a team from the Principal's office would be drawing up a plan to visit all departments of the college, followed by visits to schools culminating in a college level meeting. These initial meetings would be intended as opportunities for familiarization, permit exchange of ideas and opinions on the way forward.

2.2: Principal conducts college wide Departmental visits

The Principal embarked on a college wide departmental visits to familiarise himself with issues unique to each department, receive briefs on teaching ,research and outreach activities, discuss issues affecting staff, get views of what they expect of the new management and dialogue on ways and means of building a more united and better CAES.

The visits began on 24th September, 2013 with the Department of Environmental Sciences, followed by Geography and that of Agricultural Production on the 25th September 2013. On 26th September the Principal visited the Department of Food Technology and Nutrition while on 27th September 2013, Prof Bashaasha visited two departments namely Extension and Innovation studies and that of Agribusiness and Natural Resources economics. On 30th September 2013, Prof. Bashaasha visited the department of Agricultural Bio systems engineering. His final visit was on October 1 to the department of Forestry, Biodiversity and Tourism.

Flanked by the College Administrative staff comprising the Human resource, Procurement and Communication officer, Team leader and Registrar, the Principal

was briefed by Heads of Departments about the achievements, challenges and later chatted with staff on other burning issues and the way forward.

In his remarks, Prof. Bashaasha thanked the departments for accepting his visits pledging more frequent interactions. He said the visits would have happened some time back but was delayed by the strike. Prof. Bashaasha took over office on August 1, 2013 but shortly after a week the staff went on industrial action demanding salary enhancement.

Prof. Bashaasha outlined for key objectives of his visits. He said the visit offers an opportunity to:

- . Get to know each other better in a familiar setting
- . Familiarise with issues unique to each department
- . Dialogue on ways and means of building a more united CAES and
- . Chart a common way forward for a better CAES

In his key message the Principal emphasised the immense CAES potential and centrality both as a college of Makerere University and a force for economic development. He expressed the need to keep united quoting one writer who said, “If you want to go fast then please walk alone. If you want to go far, then walk together”.

During the interactions there were cross cutting issues that emerged including:

1. Understaffing for both the academic and non teaching staff
2. Tourism students still registered at CHUSS
3. Constraints to practical teaching
4. Inadequate Teaching Aids
5. Inadequate and late release of examination funds
6. Inadequate and late release of supervision funds
7. Lengthy process of handling graduate theses
8. Missing marks for Graduate students
9. Worrying Graduate completion rates
10. Graduate admission vis a vis capacity
11. Issues with external examiners and motivation of internal examiners
12. Lack of orientation for MSc
13. Chasing syndrome for services and monies
14. Repercussion of the new council policy on part-timers and extra load:
15. Specialised soft ware needs for some units
16. Infrastructure sharing still a problem
17. The 10 credit policy may affect research and other outreach activities
18. Outstanding balances
19. Financial resource sharing in CAES
20. Delay of the passing of new programs eg BSc Water and Irrigation Engineering has

21. over delayed to be approved y senate
22. Delays in releasing examination results
23. Lengthy process to get project funds:
24. Shifted members uncomfortable in some units.
25. Proposal to transfer the MSc Watershed Management
26. Proposal to stop teaching Tourism in FBT
27. Inadequate furniture vis a vis number of students
28. General lack of teaching space
29. Funds from private programs to departments not clear:
30. New council policy on contact hour inconsiderate of Recess term activities
31. Denial of Annual leave

2.3: Former Ag. MUARIK Director hands over office

On Wednesday February 26, 2014 the former Ag. Director MUARIK Prof. Moses Tenywa handed over the instruments of power to the new Ag. Director. Dr. Phinehas Tukamuhabwa at the Continuing Agricultural Education Centre (CAEC) Kabanyolo.

The function was attended by Prof. Bernard Bashaasha (Principal/Chairperson), Dr. P. Tukamuhabwa (In-coming Director MUARIK), Prof. M. Tenywa (Outgoing Director MUARIK), Ms. G. Naakubuza (Ag. Farm Manager MUARIK), Mr. B. Barigye (Manager Internal Audit), Mr. T. Chrysostom (Ag. Assist. Farm Manager), Mr. F. Masiko (Clerical Officer Accounts), Ms. J. Biganja (Finance Accountant CAES), Ms. P. Kyarisima (Secretary – Principal's office) and Ms. J. Anyango (PRO CAES/ Secretary).

The Principal informed members that it was deemed necessary to postpone the previous meeting and to hold it at MUARIK so that key players like the Ag. Farm Manager, people handling finance and Deans could attend to provide required additional information.

The Outgoing Director Prof Moses Tenywa Makooma thanked the administration for the support accorded to him saying the history of Kabanyolo had been a pain with the major challenging issues being productivity and integration of units.

He said :

- i) the number of cows had increased from 53 (2008) when he took over to 57 (2009) and reached the peak of 60 (2010) then dropped to 44 due to governance issues;
- ii) got a lease to Gatsby from the DVCFA attached to the report;
- iii) got the 2011 version of the survey showing house allocations to senior staff, support staff and Post Graduate housing units and their status

(pg 29 of the report)

The In-coming Director Dr. Phinehas Tukamuhabwa thanked management and staff for entrusting him with the office and appreciated the outgoing Director for the job well-done and the explanatory and detailed report given and expressed his willingness to continue with the task.

Manager Internal Audit thanked the outgoing Director for the work done and the incoming Director for accepting to take on the challenge. He raised a number of issues arising from the report on the statistics like the number of pigs (34) and cows (53 in 2008) and the trend over the years.

He advised the Outgoing Director and the Ag. Farm Managers to think of the picture such numbers portray, the need for answers to help improve Financial allocations and controls and also plan explanations for audit queries.

3.0: RESOURCE MOBILISATION AND COLLABORATIVE EFFORTS

3.1: CAES holds meeting with MBW engineers

On October 25, 2013 CAES held a meeting with MBW Engineers from Creations Consultants Africa LTD on the AfDB project to construct hightech teaching and research building at Kabanyolo at the Continuing Agricultural Education Centre - Kabanyolo.

The meeting was chaired by the Principal Prof. Bernard Bashaasha and attended by Mr. Ochola Stephen, Mr. Edson Aguma, Mr. Kabuye Matia K, Dr. Kasirye Alemu Eve Mr. Naaya Jossiah and Mr. Naaya Jossiah. Others were Dr. Denis Mpairwe, Ms. Kevin Nabiryo, Ms. Gatrude Naakubuza and Ms. Jane Anyango from CAES

The meeting was part of the participatory activities to ensure that the college is ready to receive funds adding that Makerere was the biggest beneficiary of the ADB government secured loan that had already been launched at Busitema two days back. Other beneficiaries he said were Busitema University, Gulu and Mbarara Universities.

Arch. Ochola Okot Stephen said, Makerere was already late because the university was supposed to submit the work plans after the said launch and that the first disbursement is expected to be on November 25, 2013.

He explained that MBW was a consultancy engineering firm forming a consortium of other firms with different expertise mandated to come up with plans for the proposed high tech Biosciences complex at the main campus and another teaching and research building at Kabanyolo. He said:

- a) the days major agenda was take the college through what the firm had come up with so far and also highlight on the brief got from Makerere in regard to Kabanyolo
- b) The exercise begun three months after the write up by the university steering committee and were in the process of harmonising the plans
- c) for the case of Kabanyolo, there was a document before
- d) it was important to conclude the brief to guide their work plan

He presented the Kabanyolo brief as follows

Proposed Brief for the Teaching and Research Building at Kabanyolo
Reception area
/front desk
Staff Offices 200 - Seater
teaching theatre 100–Seater
Teaching Theatre 50–Seater
Teaching Theatre Seminar rooms
Tissue culture laboratory
Gene bank laboratory
Computer laboratory
Computer server room
/computer Admin Office
Graduate student work space

Members observed that:

- 1) Students canteen was missing
- 2) Toilets should part of the brief on every floor
- 3) The original brief had five floors and not four. The fifth floor in the original brief was to cater for; A - 700 - seater library, accommodate Deans, Principal and heads of departments while the Deputy Principal would remain on campus with the departments of Agribusiness, Geography, evening classes and a small office for the Principal and specialised labs.
- 4) The number of staff offices were 200 and not 60 as presented
- 5) The 200 - seater was an amphi - theatre and not a teaching theatre
- 6) The brief was supposed to have a general laboratory that cuts across f soil, crop and animal science analyses.
- 7) Kabanyolo has the structure for tissue culture lab therefore the need to reconsider its face-lifting.
- 8) Brief should provide for a security office at the entrance.
- 9) Gene bank exists but requires structural audit since a separate budget for equipment was catered for.
- 10) The Molecular laboratory was missing

Members suggested as follows:

- The plan for staff offices should be maintained at 200 as in the early brief.
- The 200- seater teaching theatre be corrected as the Amphi Theatre
- Consultants have a look at the existing Tissue culture lab if it can be refurbished to the required standard.
- The Gene bank be turned into a general laboratory on grounds that there one already exists at Kabanyolo and only lacking equipment
- The plan for the fifth floor should allow for expansion in case of financial limitations under the current provide.
- The plan for the guard office should be provided for.
- Engineers should look at the current Gene bank and advise on the structure.

Mr. Naaya Josiah presented the artistic impression of the Kabanyolo building.

Members;

- 1) Were impressed saying so far what was discussed was incorporated.
- 2) Maintained that the fifth floor should be implemented.
- 3) Said that beyond this meeting there would be a discussion at the college level to share the impressions collective ownership.
- 4) Requested that the original colours of the impressions be presented

It was agreed that:

- 1) Consultants will, by 5:00 pm send;
 - a) Kabanyolo impression I and II of the revised version
 - b) Floor layouts of the five levels
 - c) The revised Brief
 - d) Check and Advice whether the Makerere Campus Micro biology lab can cater for microbes gene bank
2. After receiving the briefs, impressions and layouts, CAES was expected to;
 - i) comment on :
 - The two impressions and provide her recommendations
 - Makerere and CAES layouts
 - Revised Briefs and
 - ii) Provide a breakdown of the revised brief e.g. seminar rooms, general lab, offices
 - iii) Advise on whether the existing Gene bank if refurbished would be multipurpose eg cater for animals too.
 - iv) Convene a quick meeting on Monday October 28, 2013 to give the feedback.

3.2: A team from Netherlands visits CAES.

On November 21, 2013, the Principal CAES Prof. Bernard Bashaasha met two visitors from Netherlands namely; Astrid Mastenbroek (the Chief of Party ISSD Uganda) and Dr. Co Verdaas (Director CDI Wageningen University) in his office. The meeting was also attended by Chair, Department of Extension and Innovation Studies Dr. Paul Kibwika.

ISSD is a project implemented by CDI based in Uganda funded by the Government of Netherlands through the Dutch embassy. The project aims at improving seed systems by focusing on streamlining non formal sector to enable small scale farmers access better quality seeds. Astrid Mastenbroek is the Project Coordinator.

The Principal – CAES Prof. Bernard Bashaasha commended the Climate Change Smart Project for its mix bringing on board students from different continents of Africa, South America and Asia among others adding that Makerere was able to establish the Climate Change centre as a result of skills attained from such multinational programs.

He appreciated the projects business model of a public private partnership as Interesting and identified some areas of interest for collaboration as including Food production, logistics, post harvest losses, food handling and warehousing.

The Principal informed visitors of the CAES units dealing with aspects of rural planning, water management and irrigation to be notified on this opportunity.

He assured the team of the available structures and personnel to deliver and continued dialogue on possible areas of collaboration. Prof Bashaasha observed that Africa and Europe had had long term engagements but this relationship had failed to yield tangible gains for Africa in terms of marketing her products to Europe, an issue that would require evidence based on research to address the problem.

Members explored possible opportunities for further funding and collaboration. The following areas were identified:

1. Post harvest where it was observed that 30-40% of the farmers produce in Uganda is lost due to poor handling and that, this was one of the top aspects on the political agenda in the Netherlands;
2. Water Management in relation to agriculture where Netherlands was said to be advanced in this area;
3. Dairy development and;
4. Food value chain (food security and food quality) taking care of

3.3: CAES wins shs. 2.5bn Grant for Biogas Research

The College secured a 2.5bn UGX (EUR 748,865) grant to research the implementation of biogas technology in Uganda, Ethiopia and Cameroon.

Dean of the School of Agricultural Science Prof. Johnny Mugisha is leading the formation of the Afri-Flame Network, a multi-institution and multi-disciplinary team of researchers, technology implementers and community trainers.

“We are delighted to be leading this international consortium to research the benefits and barriers to implementing this exciting technology in Africa. Biogas has the potential to provide a reliable and secure energy source for cooking and lighting, cut out choking woodsmoke in kitchens and reduce the pressure on our shrinking forests.“

The consortium won the grant from the African Union Committee’s 2012 research call, despite stiff competition from over 250 other applications. Over the next 3 years, Afri-Flame partners will research the effects of biogas technology on indoor air quality, use of bio-slurry on crops and improving the efficiency of biogas technology.

According to Prof. Mugisha, „Energy Villages. will be established in the three countries to trial biogas technologies of different scales. The project also recognises the human dimension as critical to a successful biogas project, and is researching

social factors influencing use and proper management, and running training workshops and troubleshooting issues following installation. In total, the project will train 4 PhD and 9 MSc students, and support the development of an installation and support infrastructure for biogas.

Working alongside Makerere University, other Afri-Flame partners include Addis Ababa University and The Institute of Sustainable Development in Ethiopia, the Catholic University of Cameroon and the Phytobiotechnology Research Foundation in Cameroon. Others are the University of Aberdeen and the James Hutton Institute in Scotland, and SMEs, Green Heat Uganda, and Climate Futures in Scotland. Such a combination of multidisciplinary researchers, technologists and communicators makes this project unique in its scope.

Prof. Mugisha observed that the research of these experts will support governments and policy makers to better understand biogas as a valuable and viable alternative to wood and charcoal as a cooking fuel. Biogas technology is a waste management system that is a clean, renewable and underutilised source of energy. The gas can be used for cooking, lighting and electricity production and is produced when food wastes or manures decompose in a tank, called a „Biogas Digester.. Biogas effluent is a very rich fertilizer.

Biogas digesters and energy saving stoves of various models and sizes will be installed in each of the Energy Villages. Participating homes are being chosen on their ability to provide enough manure feedstock to maintain the biogas digester, and the majority will have 2-3 cows. Afri-Flame will help families reduce their dependence on wood and charcoal, increase the productivity of their soil and crops and improve respiratory health.

Using biogas also has wider environmental benefits, by reducing the demand for wood and charcoal, and protecting the forests that play a vital role in preserving soils, generating rainfall and fighting the effects of climate change.

Afri-Flame will also research ways to minimise the risks of contamination from biogas feedstock and effluent. It will consider ways to reduce the costs of upfront installation, which makes the technology difficult for many people across Africa to afford. This will include an analysis of the use of micro finance and loans.

National biogas programmes in Asia and Africa have the potential to bring biogas to thousands of households. However, detailed analysis of economic, agricultural, health risks and benefits has not been studied in much detail. Afri-Flame will provide answers on how well biogas systems can fit into farming systems in Uganda, Ethiopia and Cameroon and how the technology can provide maximum benefit for farmers.

3.4: Israel Ambassador H.E Gil Haskel visits Makerere

Israel government promised to tripled its intake for Agricultural students from 41 to 120 as a means of boosting the agricultural sector in Uganda. The revelation was made by the Ambassador of Israel H.E Gill Haskel during his second visit to Makerere University on Monday March 3rd, 2014 in a meeting with various University and government officials.

Flanked by the Education Minister Jessica Alupo, Ambassador Haskel praised the first lot of Ugandan students currently in Israel saying they were making wonders and had fallen in love with the farm operators.

He explained that although Israel has a low rainfall pattern of 22 mm compared to Uganda's Karamoja rainfall patterns, it has made tremendous advances in agriculture expressing optimism that Ugandan students can be able to transform Karamoja into a viable agricultural zone.

He said, in the two years Uganda has patterned with Israel, it will be able to become a backbone of modern agriculture.

Ambassodar Haskel also promised to link the University to Israel institutions that are working towards boosting forestry and fish breeding most especially Nile Perch. " I am excited about domesticating Nile Perch because this is not a Ugandan challenge but world over most especially in the revolution of Food security. If Nile perch is fully domesticated, it will propel the food security in the Victoria basin because now fishermen go into the lake with fishing gear, only to come out with nothing", he added.

He appealed to Ugandan Government and the University to carry out reciprocal visits to its students in Israel for moral boosting and also expose staff to bio-learning and institutions for possible collaboration.

The Minister of Education and Sports Jesicca Alupo said government was looking at the Israel Agro studies collaboration as a way of equipping students with practical skills and job creation. "I am confident that students will make an agricultural revolution in this country. Israel grows a lot of citrus and I would like to see what it takes. Eastern Uganda was zoned to produce citrus but due to lack of expertise many farmers cannot". The minister stated.

The Minister requested University officials to establish farms to enhance practical training and to act as a model for other Universities and Secondary schools to emulate. Minister Alupo expressed government commitment to strengthen collaboration with Israel Government and to consult the Ministry of Internal Affairs and that of Foreign affairs to come up with a special arrangement for gratis visas for officials travelling to and from Uganda and Israel.

In his welcome remarks, the Chairman Makerere University Council Eng. Dr. Wana-Etyem welcomed Ambassador Haskel to Uganda. He said in November 2011, Makerere University Council set up a Task force to restructure the University following frequent strikes and continuous agitation by staff for better working conditions.

Dr. Etyem said the task force benchmarked Bar Ilan University in Israel which was not popularly known by then but has delivered the first tangible output of the Task force. “On the 3rd of October 2013 a group of 31 students was flagged off to Israel by Education Minister Hon Jessica Alupo for one year internship of the Agro Studies training centre in Israel”.

He hailed Israel for her technological development that puts it on top of the leading countries in the world in every aspect despite its small size.

Makerere University Deputy Vice Chancellor Academic Affairs (DVCAA) said all University activities point to one thing that Makerere is keen to augment its internationalisation to different levels as highlighted in the presentations.

He appealed for more partnership opportunities with Israel Universities in different spheres that are of particular interests and needs of the Universities and national goals. Dr. Ogwang also appealed to Ministry of Education and Sports to support the Agro studies officials to make frequent visits to Makerere by granting them gratis visas. The DVCAA also asked Government of Uganda to support Makerere by building more collaboration with Israel Universities for capacity building and financial support.

The Principal College of Agricultural and Environmental Sciences Prof. Bernard Bashaasha thanked the state of Israel for choosing to partner with Makerere in areas of human and academic endeavours among all Universities saying the Agro studies initiative is a humble beginning of something bigger.

Prof. Bashaasha described Israel as an agricultural wonder having turned desert land into a fertile and productive land, “We admire you and congratulate you and we have a great deal to learn from you in terms of knowledge and technology . The Agrostudies internship training you are providing to our students is a timely intervention.” He said.

As Makerere, Prof. Bashaasha said, the program will help address a practical training gap in dealing with the perpetual criticism that graduates lack the practical skills to serve Uganda's agricultural needs today. “We continue to produce white-collar graduates to serve in a blue collar agricultural environment leading to a clear mismatch that Israel is helping us to address. It is also no secret that domestically we lack adequate and appropriate internship placement opportunities which Israel is helping us to solve,” he stated

The Principal further said Uganda as a country is grappling to find appropriate ways and means of skilling Ugandan youth. He said the Agro studies initiative was consistent with government program on skilling the youth.

He implored the Government of Israel to tap into the numerous opportunities and programmes in the college such as the Food Technology and Business Incubation centre, forestry, as well as emerging issues and impact of climate change that open a window of irrigation development.

3.5: Department of Geography, Meets members from West Point, NY, USA

On 17th March 2014 staff from the Department of Geography, Geo Informatics and Climatic Sciences held a meeting with members from Dept. of Geography & Environmental Engineering at West Point, New York, USA at the Mountain Resource Center .

The purpose was to discuss modalities of collaboration ahead of the proposed new program Bachelors of Science in Geography under which Military Geography would be offered as a course.

Makerere University Head of the Department of Geography, Geo Informatics and Climatic Sciences Dr. Fredrick Tumwine explained that the idea originated from an Email from Assoc. Amy Krakowka on 21st May 2013 about an interdisciplinary team working on Water Vulnerability in Sub-Saharan Africa. This he said was followed by a meeting of 22nd July 2013 Headed by Ass. Prof. Amy Krakowka and Maj. D Malcomb accompanied by 4 students that marked the implementation of the collaboration.

Dr. Tumwine said that the brochures made the develop interest in military Geography, strengthened links with the Prime minister's office which deals with disaster which catapulted links to Maj. General Dr. Julius Oketta and the UPDF.

The head also thanked Col. Prof Wily Thompson and Department for developing interest in Makerere University and for sparing time to come himself to meet with the staff. He also thanked GGCS members, former leaders and students (MUGS) for coming for the meeting. Describing former leaders as departmental mirrors and advisors linking the department to the communities..

The head further thanked GGCS members of staff for supporting the new strategy of making Geography relevant to the people outside the University. He expressed confidence that the department was moving out to solve problems affecting the country and the region.

This he said was in line with the department mission through contributions such as

the introduction of new course such as MSc: DRRM & Climate Change BSC Geog with specializations in Military Geography being one of them.

Other contributions include recent trainings and refresher courses under taken by staff on Community Based Risk Assessment and Strategy Development in early December 2013 (3rd Dec.) by Dr. Lwasa; Building National capacity in utilizing Earth Observation and Geospatial Technologies for Disaster Risk Management: For NECOC (National Emergency Coordination and Operations Center) for two weeks from 24th February 2014 by Dr Yazidhi Bamutaze.

Dr. Tumwine also outline some of the recent research conducted by staff members including Disaster prone areas and Environmental issues Mt Elgon, Kabale and Rwenzori region by Drs Bamutaze, Mukwaya, Mugagga, Nakileza Associate Prof. Mwanjololo; Urban issues: Drs Lwasa, Twinomuhangi and Mukwaya. Refer to Urban HUB/center; Climate issues by Assoc. Prof Basalirwa and group; Mountain studies and Research by Dr. Nakileza and Resource Center the only one in Africa.

He reported that he won an award in Poverty reduction and was recognized among who is who in Uganda 2013 for Winner GKI (Global Knowledge Initiative) in round

four. Three winners among hundreds who participated (Partners: Assoc. Prof. Amy, Dr Mugagga, KABECOS and KRIFS my wife is the Chair person and I.m Chief Planner) GKI helps to propel work of finalists to solve the identified challenge. Training, connection to funders and publicity. The overall objective to make Uganda one of the biggest producers of honey and bee hive products in the world.

It is KRIFS that made the first delegation from West Point got interested in what Prof Thompson's department has named: The Village Program (TVP)

The Chief Guest Prof. Col Wiley Thompson thanked the Departmental chair steering the initiatives to start new course. He said the team had come to Uganda to learn and met General Ivan Oketta. He criticized the mentality of the developing world looking to the Western countries for solutions as wrong saying developed countries should listen and understand what problems people are facing before offering solutions.

He said the introduction of military geography was one way of addressing society problems. He emphasized that military geography is not only about war but would apply principles from peace to war taking into consideration humans and the environment.

The team later met the Dean School of Forestry, Environmental and Geographical Sciences Prof. Mnason Tweheyo who briefed them on the school structure, staff and student population. Prof. Tweheyo expressed happiness for the collaboration

saying the school was looking forward to start BEGS and the elements that have been missing such as military Geography that can also be linked to forestry and environment. Prof. Tweheyo also said the school was looking forward to having an MoU and the structure on how to harmonise the student exchange and assured Westpoint of his support. He informed the visiting team that some of the staff were working with professors in the US to breed grasshoppers for consumption and commercialisation.

Prof. Col. Wiley Thompson said forestry was cannot be neglected on reason that the expansion of Agricultural activities impacts on the environment . The next day teh team met with the DVCAA represented by Prof. Bernard Bashaasha who is also Principal of The College of Agricultural and Environmental Sciences.

In the afternoon the team met went to the Office of the Prime Minister where they were received by the Assistant Commissioner in charge of Disaster preparedness and later held a meeting with Maj. Gen. Dr Julius Oketta.

The Major General gave a brief on the creation of the national disaster centre, the most re-known disasters in Uganda, the country's protocol in responding to the disasters, the role of military in disaster response and public perception about the army, challenges and future plans.

3.6: Principal meets a team from College of Health Sciences (CHS)

On Monday march 24, 2014 the Principal mets a team from the Global Agriculture and Food Security Program (GAFPS) College of Health Sciences (CHS) on the Global Agriculture and Food Securiy Program (GAFPS in the Principal's office. The team comprising Dr. Tom Mugisa, Coordinator Nutrition CRSP, PMA Secretariat, Dr. Henry Wamani and Bagonza Arthur School of Public Health, CHS, was received by Prof. Bernard. Bashaasha Principal and Dr. Phinehas Tukamuhabwa

The Coordinator Nutrition CRSP and Secretariat PMA gave a brief background on the nutrition status in the region and Uganda in particular and saying Surveys show that 3rd world countries do no not meet the Millenium Development Goals on nutrition;

The G20 came up with a fund to support countries to promote agriculture and food security and the first country to benefit was Rwanda with a grant of 50 million USD; Uganda also applied for a grant on water and agricultural production but did not succeed. In the second call, Uganda never submitted a proposal till last year when the 3rd call was made;

Uganda's proposal was ranked high 7th out of the 20 where it was allocated US \$ 27.64 million. World Bank was designated as the supervising entity for the funds.

The GASFP Cordination Unit will be in touch with chosen supervising entity to commence the process of implementation. The final approval will depend on the appraisal phase. One of the critical requirement for the project to take off is an Impact Evaluation.

A steering committee comprising permanent secretaries from the Ministries of Education, Health and that of Agriculture was set up. There was need for collaboration among three ministries of Agriculture, Health and Education to fill the gaps that have been existing in the previous processes and to use primary schools as centres of the project to promote production and consumption of nutritious products in communities.

Given Uganda's strong university capacity in nutritional sciences and public health, the steering committee GAFSP felt that their involvement could be helpful, both in guiding program implementation and documenting lessons learned. The key part of the project is to facilitate country led investment plans that are inclusive of participation all relevant stakeholders such as producer groups, civil society organizations and the private sector. Other international and national organizations being brought on board include the UK Based PCD that works on child development, IFRI, UNICEF and WFP.

The project will be implemented in 39 districts of Uganda but mainly in UPE primary schools but the final number of districts will depend on the costs per district and availability of funds. The ministry has already written to College of Agricultural and Environmental Sciences and College Health Sciences; and the first mission will be in April 7, 2014.

Members agreed that:

1. For institutions, Makerere University should be fronted. For specifications CAES should be fronted. If they want a consortium of colleges these will include CAES, CHS School of Public Health and then Kyambogo University as a sub grantee.
2. At in house level, prepare draft protocols before the next mission coming on 7th April, 2014
3. The Ministry of Education should provide the list of UPE schools selected, subcounties where they are located, school population, contacts of school administration.
4. The Ministry of Agriculture, Animal Industry and Fisheries should provide enterprises by district.
5. The Ministry of Health should provide details of the numbers health centres and staff and dealers in nutrition.
6. Tom to send more information through emails.

4.0: RESEARCH INNOVATIONS

4.1: 20 High yielding, Drought and Disease tolerant Sweet potato varieties unveiled

Makerere University Department of Agricultural Production bred new sweet potato varieties that are high yielding, tolerant to drought and sweet potato viruses. The varieties were unveiled in Gorooba village, Bururu parish, Byabigambire subcounty in Hoima district during an open day for participatory variety evaluation for farmers to choose what they think was the best variety for them based on yield and colour on November 1st 2013.

Over 20 sweet potato elite varieties developed at Makerere University's Research Institute Kabanyolo named Kabanyolo Sweet Potatoes (KSP) were supplied to a group of 30 farmers called "Ageteraine" chaired by Mr. Mugisa Geoffrey who provided land where the varieties were put under three blocks. Other lines from Namulonge (NASPOT) and local varieties (Dimbuka and Semanda) were also given to farmers for performance evaluation.

The three year project was funded under the Regional Collaborative Programs of the Swedish International Development Aid (SIDA). The project involves Makerere University, Namulonge Agricultural Research Station, KAZARDI in Kabale, Kenya Agricultural Research Institute (KARI), Mikocheni Agricultural Institute (Tanzania), University of Addis-Ababa (Ethiopia) and Rwanda Agricultural Research Board.

The Principal Investigator Makerere University who is also the Regional Coordinator for Eastern Africa Prof. Samuel Kyamanywa said Makerere has received about 300,000 USD over the three years and about 1,000,000 USD for the region for the project which should be ending in December 2013 but because of problems of fund disbursement from donars, they have allowed a no cost project extension till June 2014.

"This was a big project looking at three crops cassava, sweet potatoes and potatoes. The overall objective was to come up with new technologies for producing these crops under the climate changing environment by looking at varieties that are not only high yielding but also resilient to different environmental conditions like drought, too much water and diseases", Mak. Professor Samuel Kyamanywa stated.

The other objectives according to Prof. Kyamanywa were to develop a system that would be able to deliver clean planting materials for these vegetatively grown crops and to see if the process of delivering seed materials to farmers can be institutionalised so that only registered people whose job is to produce planting materials, are monitored by the ministry.

Prof. Kyamanywa further said the University was piloting that system by

partnering with a Biotechnology private company (Bio crop) to produce clean planting materials from Tissue culture laboratory in Makerere, then give the clean planting material to this company to multiply the vines under their conditions, give to distributors who eventually distribute to the farmers.

He observed that one of the biggest challenges was that the varieties bred were very high yielding and if farmers adopt using them, there will be an over production of sweet potatoes and cassava requiring different stakeholders to think about how to process and create new products and markets besides just eating.

Another big challenge he said was the institutionalisation of the seed delivery system in the country to curb the spread of pests and disease, “What we hope to do is to dialogue with government and policy makers so that they put policies in place to protect farmers. Right now they buy seed materials without knowing whether they are taking viruses or fungi.” Prof. Kyamanywa said.

The NAADS Coordinator Byabigambire Sub county Mr. Onyuta David described the projects participatory nature of farmers, NAADS and NARO as a brilliant idea that will enhance farmers acceptability of new technologies. “Farmers have had hands on experience unlike the past when we had challenges of convincing them to take on new varieties and am sure they have appreciated and will convince more to come on board”, Mr. Onyuta said.

Mr. Onyuta described the projects experimentation in Byabigambire sub county as a unique opportunity that should be replicated in other sub counties in Hoima and other districts.

He said cassava, sweet potato, beans, bananas , groundnuts and coffee growing were the main source of livelihoods in the area but were increasing hampered by diseases and pests such as sweet potato weevils, Ground nut rosette, bean flies, banana bacterial wilt, cassava brown streak and the newly discovered coffee stem borer. Other challenges he said were lack of market for the produce and the farmer.s negative mindset to adopt new technologies.

Makerere University Graduate Assistant conducting the study on sweet potato breeding for drought, disease and other stress tolerance Anthony Mwijje hailed farmers for their cooperation during the trials, “They did not give me any stress in management because they were interested and they told me that the local varieties they were planting were no longer marketable so they wanted new ideas on how to plant them”.

Mwijje said the 20 varieties will be narrowed down for selection to five in another advanced trial in the next season for recommendation to the Variety Release Committee.

“I am excited in the role of plant breeding in our food systems here when we see sweet potatoes as number three in the country’s per capita consumption and recently with the upheaval in the diseases in cassava and bananas, sweet potato is giving us a good cushion to hunger. So I really see that farmers. interest in our new clones exciting me as a breeder and am very confident that we shall have elite varieties which will put our name and that of Makerere on the map.

4.2: Two new Soybean Varieties 4N and 5N released to the public.

CAES released two new soybean varieties making a total of six commercial varieties recommended for production by farmers in Uganda. The two new varieties are Maksoy 4N and Maksoy 5N developed through conventional plant breeding. Previously the college had released Namsoy 4N and Maksoy 1N (2004), Maksoy 2N (2008), Maksoy 3N (2010).

The new varieties 4N and 5N were officially released to the public by the Deputy Director of National Agricultural research Organization Dr. Imelda Kashaija during the the Variety Release Committee Meeting held in Entebbe on 25th November, 2013.

Other officials present included the Head of National Seed Certification Services Joseph Bazaale , the Commissioner of Crop Protection, Ministry of Agriculture, Animal Industry and Fisheries Mr. Kamayombi Bulegaya and the Senior Agricultural Inspector National Seed Certification Services, Depart. of Crop Protection (MAAIF) Divine Nakedde among others .

The new varieties are resistant to soybean rust disease that is the most devastating soybean disease in Africa. The varieties are also high yielding than all the commercial soybean varieties in Uganda. Therefore can be grown in the major soybean growing areas in Uganda and across the region. They also have a moderate maturity period. Maksoy 4N matures in 103 days while Maksoy 5N matures in 96 days.

These varieties were tried for several years in different locations in Uganda (both on-station and on-farms) before release. They were tested for four consecutive seasons namely; the second season of 2011 (2011B), first season of 2012 (2012A), second season of 2012 (2012B) and the first season of 2013 (2013A).

On - station trials were performed at six contrasting sites at Namulonge, Kabanyolo , Nakabango in Jinja, Iki-Iki in Budaka, Ngetta in Lira and Mobuku in Kasese while the On -farm trials were done in Budaka, Lira, Kole, Kamwenge and Kasese districts. The On-farm trials accelerate adaptation (to environmental conditions) and acceptability/ adoption (by the farmers).

The Senior Agricultural Inspector National Seed Certification Services, Department

of Crop Protection (MAAIF) Divine Nakedde reported that the University had fulfilled the conditions as specified by the Variety Release Committee.

She said Article 1 of the UPOV Convention, 1991 defines a variety for the UPOV purposes as a legal term referring to a crop type upon which breeders rights can be granted. The new variety she added must be clearly distinguished from any other variety whose existence is a matter of common knowledge and must have at least one character distinguishing it from others of the same species of common knowledge.

“The soybean variety presented has expressed more than one distinguishing character from the check varieties of common Knowledge. Basing on that, I recommend the candidate variety presented be released for farmer use”, The inspector announced.

Releasing the new varieties the Deputy Director of National Agricultural research Organization Dr. Imelda Kashaija underscored the importance of continued release of new varieties for increasing chances for farmers to choose varieties that suit their pockets and circumstances.

“These days we have got the problem of climate change which is affecting many varieties and species. So definitely we need more varieties that will be even resistant to biotic and abiotic constraints like drought and flooding”. Dr. Imelda said.

She also observed that though the country had some resistant varieties, many of them were losing resistance as time goes on hence the need to release new varieties to replace existing varieties that circum to pests and other circumstances.

The Head of National Seed Certification Services Joseph Bazaale in the Ministry of Agriculture, Animal Industry and Fisheries emphasized the need for COMESA Member states to form a special committee to handle issues of seed certification and to start dialoguing at a higher level beyond national concerns.

The Lead Researcher and Plant Breeder Makerere University Department of Agricultural Production Dr. Phinehas Tukamuhabwa said the new soybean varieties were developed by the University with assistance from the Vegetable Oil Development Board (VODB) in the Ministry of Agriculture in collaboration with the National Agricultural Research Organization (NARO).

Dr. Tukamuhabwa described soybean as a miracle crop of so many uses that produces more usable proteins per unit area than any other crop, costs less in relative terms and was getting more and more important in Uganda. He said a whole soybean has about 27 –53 products while soybean flour and products amount to 48.

Dr. Tukamuhabwa however observed that the major production challenges related

to soybean production in the country include the soybean rust disease and fake seeds on the market.

“There is a developing Soybean rust disease and a severe one but also farmers have been complaining that they have been buying seeds which do not germinate or if they germinated, the plants do not look the way they are supposed genetically and this is what the University is trying to address”, the Lead Researcher said.

4.3: Five EU-Edulink supported projects launched

On Tuesday December 03, 2013, the EU supported projects were launched at Entebbe Botanical Beach Hotel. The function was attended among others by the Vice Chair Board of the Regional Universities Forum for Capacity Building in Agriculture (RUFORUM) and VC Gulu University, the Vice Chancellor Makerere University, the Executive Secretary RUFORUM, Principal CAES, Principal Investigators of different projects, Representatives of the International Project partners and Regional collaborating universities.

The projects launched were:

- Establishing and Piloting Postgraduate Programmes for Supporting Agricultural Development in Post Conflict Countries of Central and Eastern Africa.
- Partnerships to strengthen University food and nutrition sciences training and research in Eastern and Southern Africa.
- Concerted Fit- for purpose PhD training in aquaculture and Fisheries to improve food security and livelihoods in Sub-Saharan Africa.
- Strengthening University capacity to enhance competitiveness of Agribusiness in East and West Africa.
- Strengthening Agricultural and Rural Innovations Systems involving three Universities in East Africa namely Makerere ,Egerton and Sokoine and three Universities in Europe(Supra Agro in France, Wageningen University and Research Centre in Netherlands and University of Capenhagen in Denmark.

The action involves joint curriculum development and delivery amongst the 6 Universities. This project addresses a very important need in the region of building capacity to facilitate change and innovation platforms.

The workshop was opened by the Minister of State for Finance, Planning and Economic Development Hon. Matia Kasaija and the Minister of State for Higher Education Hon John Muyingo.

4.4: MAAIF & DAP draft Livestock Breeding Guidelines

The Ministry of Agriculture Animal Industry and Fisheries (MAAIF) in conjunction with Makerere University Department of Agricultural is developing livestock

breeding guidelines to advise farmers on how best to make money out of their animals.

This was disclosed during the end of project workshop on Meat production in East Africa on the theme, “Increasing quantity and improving quality” at Grand Global Hotel in Kampala on February 20, 2014.

Dr. David Mutetikka from the Department of Agricultural Production Makerere University said over the period of eight years the University has been cooperating with Copenhagen and Aarhus Universities in Denmark, Sokoine University Tanzania to carry out a project to be able to produce meat of a higher quality and more meat from fewer animals using the locally available resources.

The research that started in 2006 was sponsored by DANIDA a development arm of the Government of Denmark to the tune of 2.5 million USD. The project was aimed at improving capacity to conduct research and to teach by training graduate students. Five PhD students and twenty Masters have been trained, two of the PhD students are from Tanzania and three from Uganda while ten MScs were both from Uganda and Tanzania.

Dr. Mutetikka said the objective was to produce more meat for the increasing population from fewer animals using locally available materials as the country cannot continuously increase the number of animals due to limited land yet the population is increasing and consuming more meat.

“Our results have shown that actually our local animals can produce as well as those that are imported given the right conditions of feeds. We were able to tap on the knowledge of the Danish scientists from Copenhagen University and Aarhus . It has also helped in equipping our labs” Dr. Mutetikka said.

Dr. Mutetikka said the study demystified as false the saying that Ankole and Zebu cattle are of low productivity. “We only feed them and manage them badly. When we compared them with crosses of Friesians and Boran, we are doing equally well. They produce tender meat of high quality even when they were put in the cold room they used to get tender in a shorter period than those acclaimed exotic breeds.” He said.

The study recommended integrations and use of agricultural and industrial by products for livestock feeding to produce high quality protein food. If animals are bought from pastoralist at an age of about 18 months they can be fed intensively for three months to attain a market weight and produce meat of very high quality.

Assistant Commissioner Public Health and Marketing, MAAIF Dr. Kajura Stephen said the Breeding guidelines were being developed by the Department of Animal Production in the Ministry of Agriculture to give expert advice to livestock farmers

on the most suitable breeds for particular areas.

Dr. Kajura said, in the previous years, government was providing high yielding animals but after the liberalisation policy farmers are free to buy what they need but the Ministry has realised that farmers are stocking animals without clear guidelines .

“Breeding guidelines are to guide farmers on the best profitable breed given the water and pasture availability and how much you can sell a litre of milk and a kilo of beef. What is on the ground is that farmers don.t have a technical guide to follow on which animal to keep and in which are to make profit and it is a duty of the MAAIF to advise famers on how best to make money out of their animals”. He said.

The Commissioner in the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) Dr. Benon Kyokwijuka said with assistance from the Norwegian government (NORAD)the Ministry formed the Meat Export Development Program to develop strategic and deliberate interventions in some selected areas of Uganda to prepare farmers for meat export.

These interventions looked at the value chain, establishment disease controls and how to increase production and productivity mainly by looking at increasing water for production, breeding practices, teaching farmers how to do good feeding and management of animals; promote fast growing breeds in the area and mobilisation of farmers into groups to form primary cooperative societies.

The commissioner said the ministry also intends to improve market access by establishing an export abattoir in the country through Public Private Partnership but also sell meat by grade. Dr. Benon Kyokwijuka said a Meat Grading System was formulate and is already in place .

The Principal College of Agricultural and Environmental Sciences Prof. Bernard Bashaasha appreciated DANIDA.s engagement in country’s agricultural systems saying the partnership and Danish tax payers money have been beneficial to the people of Uganda and greatly appreciated.

Prof. Bashaasha appreciated the engagement with MAAIF and policy makers as extremely important, “The greatest achievement in research is engagement with policy makers because without engaging policy makers the research would not make the impact it made, the Principal said pledging continued support to research and enhance capacity.

He lauded the partnership between the four universities as a demonstration of how to work at a regional level and actualising the political efforts of integration. He described the project focus on livestock production and productivity of quality meat as an important area addressing emerging needs.

4.5: Nakaseke opens Tomato Processing Plant based on the FTBIC expertise

President Yoweri Museveni launched a 700 million tomato processing plant in Kapeka Nakaseke district dubbed Bulemezi 2014 Ltd. The commissioning was organised in conjunction with Namunkenkera Agro processing industry Ltd, a government initiative of rural industrial parks through Gen. Salim Saleh who donated 100 acres of land. Other processing plants include The Nakaseke Grain millers Ltd, Western Greens Group of Companies, New Century Tile and Brick factory, Post Harvest Facility and Vunilla Uganda Ltd.

The industrial estate was spearheaded by the Minister in-charge of Luwero Triangle, Gen. Salim Saleh as chief investor with support and advice from investors, senior industrialists, Cairo international Bank with technical services from Makerere University staff following the designing and acquisition of the Food Technology and Business Incubation Center (FTBIC) and the Mobile Fruit Factory.

While commissioning the plant, President Yoweri Museveni commended Ugandans for having woken up from a deep sleep. He said Africa has been sleeping for 70 years from the time of colonialisation because they only focused on hand skills like carpentry and pottery and hardly thought of mechanisation and manufacturing.

“The Problem is that Europe used mechanised science and left us behind. I gave Gen. Salim Saleh a book on how Europe destroyed Africa and I am happy that he thought about it to start building a rural enterprise”. The President commended Gen. Saleh and appealed to private investors to focus on manufacturing and adding value to agricultural produce.

The President pledged to support the Namunkenkera Rural Industrial estate with high voltage electricity, piped water, a 2km tarmac access road and small scale irrigation machines for all year tomato production for the farmers.

The Chairperson Board of Directors for Bulemezi Agro processing plant who is also Woman MP Nakaseke Hon. Syda Bumba said, phase I of tomato processing had taken 700 million shillings while Phase II would require 500 million for processing bananas and pineapples.

“The most important part of phase one was installation of the cold storage with the capacity of 55 tonnes but we have a second finishing line in Kawempe for bottling tomatoes and juice products”, She said.

She said an average farmer tilling an acre of land will be able to earn between 10- 15 million per season and about 20- 30 million per year.

The MP appealed to government for a policy to protect local producers against

cheap foreign products, “ The problem is that we import many tomatoes yet we produce in surplus. Let us strengthen the concept of „Buy Uganda build Uganda., and ensure that investors have local content to ensure sustainability of local industries”. Bumba said.

Makerere University’s provides technical services and the layout

Speaking during the function Makerere University’s Assoc. Prof. William Kyamuhangire said project was spearheaded by Gen. Slim Saleh and the Uganda Investment Authority with assistance (especially the technical services and the layout) from the Makerere University Food Technology and Business Incubation Centre (FTBIC).

“The FTBIC is involved in technical transfer. It is the Mobile Fruit Processor that pioneered the tomato processing in Kapeka. With financial support from Cairo International Bank, Bulemezi set up a cold storage to market the produce and market orders have started coming in”, Dr. Kyamuhangire stated.

The Don said 300 jobs had been created in Kapeka’s tomato processing plant and about 700 more jobs expected in two years. Farmers were earning 50,000 per crate of tomatoes culminating into 10 million shillings per season and 20 million per year.

Dr. Kyamuhangire told the gathering that after the launch of the Mobile fruit processor Yumbe district, the University held a meeting with Namunkeeke agro processing stakeholders and forged a way forward on how to use the Food Technology and Business Incubation centre as a hub of rural industrial development .

“The Vision of the rural industrial centre is to transform the rural areas into business industrial zones. The Mission is to process locally available materials into high value products to create jobs”. Dr. Kyamuhangire added.

He enumerated project objectives as creating well planned industrial areas, promoting the involvement of the private sector and creating employment for youth and women. Other objectives he said were to promote entrepreneurship culture to attract the population in manufacturing and to develop marketing channels for products.

He said the rural industrial sector was premised on on four pillars namely; the resources endowed of the local community, the market, the private sector involvement and local people involvement.

Dr. Kyamuhangire expressed the need to develop the internal and external markets, mobilise farmers for efficient production through the use of inputs and improved varieties to deliver sellable products.

4.6: NORAD funded project for REDD+ in Eastern Africa inaugurated

The College launched a NORAD funded project titled, “Building capacity for REDD+ in East Africa for improved ecosystem health and for sustainable livelihoods in Eastern Africa

(UGA- 13/0019). REDD+ in full is reduction of emissions from deforestation, forest degradation, plus conserving forest carbon stocks, sustainable management of forests and enhancement of forest carbon stocks.

The 3 million USD project was launched on February 18, 2013 at a colourful ceremony held at the School of Food Technology Conference room where the Minister of State for Environment Hon. Flavia Munaaba presided over as Chief Guest.

The Minister expressed happiness over a new wave of interaction, consultations and involvement of various stakeholders in University activities saying this was a clear message from the University of the desire to contribute more towards development impact in our country.

She told participants that Climate change was no longer a myth but a reality manifested by the rise in global temperatures of about 0.8 degree centigrade over and above the pre-industrial levels causing unprecedented impacts on human societies and biodiversity such as droughts, floods, cyclones, and increases in sea levels.

“Here in Uganda, floods are now occurring more frequently, we have experienced frequent landslides and floods in low lying areas. Other impacts are the now frequent water borne diseases like cholera. All these are causing our country Uganda considerable costs to rescue affected populations, replace infrastructure or to build new resilient infrastructure” the minister said.

Hon. Munaaba reminded participants that the change in climate has been forced by the accumulation of greenhouse gases necessitating the global world to respond by measures of mitigation and adaptation of ecosystems and humans.

“So, one of the mitigation actions open to the world is reducing emissions of greenhouse gases by avoiding deforestation and forest degradation as well as enhancing and conserving forest carbon stocks and sustainable management of forests”. Hon .Munaba advised

She said her Ministry was leading the negotiations of REDD+ in Uganda under the Forest Carbon Partnership Facility (FCPF) of the World Bank where it has been able to draft the REDD+ Readiness Preparation Proposal (RPP), and to also conduct

pilot and demonstration projects.

She stressed that countries like Uganda intending to implement REDD+ must have a national REDD+ strategy or action plan; establish a national reference emission and/or forest reference level; a country wide national forest monitoring system and information system on safeguards.

“In Uganda, we are in advanced stages of developing the REDD+ strategy. This project as I have heard is going to fill a critical niche of developing capacity of University academicians to implement REDD+ activities and fill knowledge gaps including determining baselines for REDD+ implementation”. The minister said.

The Deputy Vice Chancellor in charge of Academic Affairs (DVCAA) Makerere University Dr. Okello Ogwang said the project which is a collaboration between Makerere University, the Norwegian University of Life Sciences (Norway) and University of Dar es Salaam (Tanzania) was intended to strengthen capacity of Central government, local government, Civil Society Organizations (CSOs), and community institutions to plan and implement REDD+.

The DVCAA said Africa for some number of decades has been a fertile ground for all sorts of conflicts which have distorted of human resources and infrastructural capacities describing such projects as an opportunity to strengthen universities. He appreciated the staff efforts and capability respond to calls for proposals, compete and win .

“These projects will provide resources for strengthening capacities of our Universities to implement their mandate. Makerere University is very privileged to be associated with these capacity building efforts whose activities are going to span the entire region”,

He also stressed that in order to restore and attain the calibre of Universities needed in Africa, the region must work together and capitalise on their strengths to ensure percolation of mutual benefits. He expressed happiness that Makerere University was not only taking lead in this NORAD project, but also a key partner to other projects.

Dr. Ogwang further expressed gratitude to the development partners for choosing Makerere University as a University of choice collaborative engagements pledging to do the best to deliver intended outputs. He also thanked the Principal Investigators, their teams and their international and regional partners especially the Norwegian University of Life Sciences (Norway) and University of Dar es Salaam (Tanzania) for this REDD+ project.

The Principal College of Agricultural and Environmental Sciences Prof. Bernard Bashaasha said the project fits in the college strategic plan to contribute towards

improved livelihoods in societies. Prof. Bashaasha also said the issue of improving environmental health was very important given the fact that pressure being put on the environment was intense.

The Principal Investigator, Makerere University, Prof. John Tabuti said the project originated out of concern that there is very little capacity to implement and coordinate REDD+ Activities in the East African Region.

He said the anticipated outcome of the project include improved education and research at Makerere University and other partnering universities on REDD+ as well as capacity to coordinate and implement REDD+ projects.

Prof. Tabuti said university staff will be trained to give up to date knowledge and conduct research on REDD+ PROJECTS. In total 42 MScs , 14 PhDs and 2 post docs will be trained. The university will also create a REDD+ resource centre and an information system for collating REDD+ information and knowledge. The professor thanked Makerere University management for expediting the signing of the agreements.

4.7: Food scientists get a 583,747 Euro grant for capacity building

The School of Food Technology, Nutrition and Bio engineering received 583,747 Euros to strengthen training in Food and Nutritional Sciences for the next three years. The project commenced in November 2013, with support from ACP-EU Co-operation Programme in Higher Edulink II under DCI-AFS/2013/331-203.

This was revealed during the project inception meeting held by the main project partners on February 13, 2014 at the Schools boardroom. The partners include Makerere University (MAK), Stellenbosch University (SUN) and Jomo Kenyatta University of Agriculture and Technology (JKUAT). Associate Partners include the Regional Forum for Capacity Building (RUFORUM) and the South African Association of Food Science and Technology (SAAFoST).

The meeting was attended by the Dean School of Food Technology, Nutrition and Bio engineering (MAK) Prof. John Muyonga, Prof. Marena Manley, Mrs. Cornelia Jacobs and Mrs. Engela Duvenhage from Stellenbosch University and Prof. Kamau from Jomo Kenyatta University.

The Dean School of Food Technology, Nutrition and Bio engineering Prof. John Muyonga said the overall objective of the project is to enhance the contribution of Higher Education Institutions to food and nutrition security of communities in Eastern & Southern Africa.

“The specific objective is to improve the capacity of Higher Education Institutions in Eastern and Southern Africa to provide practical training and research solutions in food and nutrition sciences. We want to make sure that our graduates are practical

and that the research done is taken up by industries”, Prof. Muyonga said.

High postharvest losses, low produce quality and dismal value addition limit the benefits derived from food production in Africa. Malnutrition is also wide spread on the continent and this is attributable, among others to inadequate food availability, insufficient levels of some essential nutrients in the staples that dominate diets and inadequate nutritional knowledge among the populations.

In spite of current food and nutrition research and training efforts in universities in the regions, these problems persist. This project seeks to enhance university capacity to contribute to amelioration of these problems through improving the relationships between training institutions and the food and nutrition sectors in Eastern and Southern Africa and by facilitating sharing of training and research resources.

According to the project partners, expected project outputs include the establishment of the project management and coordination structure ; reviewed academic programs tailored to produce highly skilled food and nutrition science graduates and the establishment of an institutional framework for identifying and responding to stakeholders' research and training needs.

Other expected outputs are the improvement of training and research capacity in food and nutrition sciences at participating universities; establishment and operationalisation of a platform for research and training collaboration for Higher Education Institutions in Eastern and Southern Africa; higher graduate employability and a better performing food and nutrition sector.

The project will be implemented in five work packages with key activities including the review and update of existing food and nutrition sciences academic programmes in participating education institutions, development of course materials, joint research by higher education institution and private sector research and training

Other activities include short term courses for technical and academic staff, Joint teaching through use of virtual teaching and learning facilities, joint research activities and dissemination of project outputs through diverse media.

4.8: Earthworm Breeding Starts

Scientists at the Makerere University College of Agricultural and Environmental Sciences have embarked on breeding of earth worms with the aim of providing alternative cheaper sources of protein to livestock farmers in the face of escalating prices of conventional silver fish or Mukene (*Rastrineobola argentea*) as a major source of animal protein.

If all goes well the plan is to upscale earthworm production for commercial purposes and job creation for the youth and women through value addition to the earthworms as animal feeds.

Dr. Fred Kabi of the Department of Agricultural Production who is the brain behind earth worm breeding says, the strategy is to use scientific innovation to intensify and integrate earthworm production enterprise into livestock and crop production as one of the main sources of income for rural development.

“We had specific interest in earthworms. This is because local poultry birds that come from the cattle corridor are big and healthy because of proteins they get from eating earthworms. Such poultry from the cattle keeping communities seen to instinctively and constantly scratching and searching every bit of the surface of decomposing cattle manure within their reach looking for the giant dung beetle, larvae of the housefly /maggot, termites and termites as their food”. Dr Kabi said.

Dr. Kabi said the intervention will focus on mimicking nature as observed in the wilderness in order to improve on farm efficiencies among smallholder farmers engaged in local poultry production as a business enterprise and source of employment to the youth that should be engaged in production of ecologically produced organic poultry.

“We have decided to domesticate the earth worms. We are adding value by first drying them and turning them into powder before it can be added to supplement animal feeds”, Dr. Kabi stated.

The earthworms are dried using solar and milled to produce earthworm meal. This is then evaluated and used to formulate rations that can be used as supplement to fish, poultry or even pigs. However, it is not yet clear about the optimal environment in terms of temperature, humidity, substrate that will maximise productivity of the earthworms per unit square meter.

“The amino acid profile of the earthworm is also yet to be got in order to establish the scientific basis for rationalising the performance of poultry and fish fed earthworm based meal”, he explained .

The don also observed that the infrastructure to kick-start massive breeding, production and experimentation of animal response to earthworms feeding is still rudimentary. The earthworms can also be bred on cattle manure and the process produces earthworm manure.

Dr. Kabi staged this innovation at Makerere University Innovation exhibition where the United States Agency for International Development (USAID) under Resilient Africa Network (RAN) pledged to support them incubate, test and expand earthworm production.

He said he was motivated to carry out the research after realising that importation of meat into the region has been growing annually at a rate higher than six percent. He observes that poultry importers top the list with 11 percent growth rate and this practice robs away immediate source of employment for the youth and women.

To him the study will turn the challenge of extreme hunger, rapid population growth, urbanisation and demand for foods of animal origin into an opportunity by engaging the private sector, farmers and scientists to work together in a public private partnership. This innovation he says will offer sustainable solutions to existing challenges of low productivity, extreme hunger, poverty and unemployment.

4.9: Student Starts Making Groundnut Juice.

Makerere University Food Science and Technology student has made the Groundnut Juice codenamed Lifetime Juice that could be the first of its kind in the world. James Matindo says he developed the juice out of passion and not an academic project.

In an exclusive interview, Matindo explained that he realised that Groundnuts though expensive have a high nutritional value but babies, people who lose their teeth in accidents or due to old age cannot chew the preferred roasted groundnuts.

“I decided to develop a product that can be consumed by all classes of people. I started in March 2014 under the supervision of Professor Archileo Kaaya and on average I produce 90 bottles per month”. James Matindo said.

A 300 ml bottle of the Groundnut juice costs 1,500/= . Matindo does personal marketing to clients and plans to increase production and publicity of his product to increase awareness.

“Initially, I injected 320,000/= from my own pocket. I buy packaging materials from Bwaise at a cost of 250/= for a bottle and its cap and get labels from Nasser Road at 150/= per bottle but my biggest challenge is the high cost of advertising,” He said.

Matindo is grateful to the Food Technology and Business Incubation Centre (FTBIC) that has provided him with Technical assistance and free use of the packaging line. The FTBIC was established at the School of Food Technology, Nutrition and Bio engineering to turn research into business. The centre is supported under the Presidential initiative for value addition.

The Groundnut juice is a nutritious product containing sodium, calcium, iron and vitamin C. The juice is made through the process of hydrothermal extraction that is, using heat and water to extract minerals and nutrients.

“We use the red groundnuts but we don't crush them, they remain as they are but they lose the red colour that is why the juice is rich in iron. The remainder can be eaten. I sell them to some ladies who dries and roasts them and these are also rich in fats, protein and fibre”. Matindo added.

Matindo has named his Groundnut juice “Lifetime Juice” and intends to call his company “Happy Farmers Limited” and to control the quality right from the garden. “A consortium for Enhancing University Responsiveness to Agribusiness (CURAD) has promised to support me to acquire basic equipment like pasteuriser, buckets, sealing machine, Grinder, filling machine and a thermometer among others worth 18 million shillings”, Matindo reported.

James Matindo is fourth year Government sponsored student undertaking a Bachelor of Science in Food Science and Technology. Last year, he worked on a cocoa value addition project where he emerged 2nd best at the Cocoa Food Science exhibition. He came up with cocoa powder, tea and chocolates and already has trial products. This year 2014, he exhibited the Groundnut juice which emerged the best innovation of the year.

He holds a Diploma from Bukalasa Agricultural College where he obtained a first class that was his gate pass to Makerere University. When he is not having lectures, Matindo looks for resources elsewhere using his Diploma Knowledge. He is helping Bukalasa Agricultural College to develop mineral water and training students in making yoghurt.

5.0: OUTREACH ACTIVITIES

5.1: CAES Holds MUARIK Open Day

On 1st August 2013, Makerere University College of Agricultural and Environmental Sciences (CAES) held the Kabonyolo Field Day to mark the end of recess term training. About 100 students graduated with certificates in Plant Doctoring. Every year, over 100 undergraduate students undertaking BSc. Agriculture, BSc. Horticulture and BSc. Food Science and Technology are dispatched to Kabanyolo Research institute to translate theory into practice.

Participants from agricultural institutions, farmers, public and private institutions, politicians and youth organizations are invited to see and share experiences from the 1st year undergraduate students who undergo competence based training to equip them with hands on skills ranging from production, management and entrepreneurship for nine weeks.

This year Makerere staff, farmers, students and invited guests from youth organizations, Uganda police and prisons, Ministry of Agriculture and agricultural institutions toured the students. projects ranging from tractor ploughing, manure composting, apiary, poultry, hay and silage making, organic piggery, land management practices, artificial colostrums making and milk testing for different diseases. Others were mashroom farming, nursery bed raising, soil sterilization, sack vegetable gardening, and running plant clinics among others.

The function was presided over by the Vice Chancellor Makerere University represented by Prof. Bernard Bashaasha. In his message the Vice Chancellor was optimistic that this platform would provide the opportunity to catalyze the creation and strengthening of partnerships and lay foundation for long term engagement and reflect on what the country needs to transform its agricultural sector and cause it to stimulate development in our country and the region.

The VC described MUARIK as a one stop centre for agriculture and related aspects. Seated on over 750 acres of land, the institute offers training in animal production such as piggery, poultry, dairy, rabbit and goat rearing. The institute also offers training in crop production, agricultural mechanisation, engineering, carpentry and service learning for mindset change.

He said the farm was endowed with farm machinery including, tractors, combine harvester, feed mill, silos and other equipment that can reduce human drudgery on the farm including a number of green houses and laboratories for research and multiplication of technologies with the capacity to produce for commercial purposes and contribute to the country's economic development.

The professor said the University had intensified capacity building efforts

particularly, focusing on strategic areas needed as stop-gap efforts for medium and long term human capital needs destined to fill the gaps and supply needed skills and competencies that the country's human capital require to be more effective and efficient.

He also said that the college had implemented a PhD program in Agricultural and Rural Innovations that attracted over 20 students with the overall objective of producing top-level skilled professionals with interdisciplinary orientation to facilitate development of institutions and structures for utilization of knowledge and technologies to promote innovations for rural development. The VC unveiled plans to develop Graduate programs in Climate Sciences, Disaster and Risk Management, Water Management and Irrigation.

In the strategic plan (2011-2021) the VC told participants that the college was planning to relocate from the main campus to Kabanyolo to develop modern facilities, expand enrolment to enhance innovative teaching, learning and research and outreach services.

Uganda Police representative SCP Muhabwe Laban said he was challenged by the students work. He said Uganda Police spouses were doing a lot of nothing yet a simple technology such as sack vegetable gardening would make a difference in their homes. On behalf of police he pledged to take on as many students as they could when job opportunities are opened.

He expressed the need to transform Uganda Police into a productive force and called upon the university to modernize agriculture so that it is looked as a business rather than a subsistence undertaking.

Uganda Prisons representative Andrew Kisitu told the participants that the force had a partnership with Makerere University based on fundamentals that the University has the expertise to offer adding that a number of interns were on the prisons farms involved in production.

Mr. Kisitu however observed that whereas the University was being choked by knowledge and skills, the prisons services was starving from lack of this knowledge which could be used to reduce crime and transform the youth.

He implored the University to fix the problem of climate change by venturing into simple technologies of irrigation and systems that can benefit farmers mitigate the problem of food insecurity.

He commended the students. projects as inspirational, "The new approach to farming is impressive. I commend the lady driving the tractor. I was inspired by the confidence the tractor driver had. I advise the students to love agriculture and the other aspect of money will come next", Mr. Kisitu Advised.

5.2: The 9th RUFORUM Annual General Meeting held in Kigali, Rwanda

The 9th RUFORUM Annual General Meeting was concluded in Kigali Rwanda. The three day conference started on 19th – 21st September 2013 and was officially opened by Rwanda's Prime Minister, the Rt. Hon. Pierre Damien Habumuremyi at the Serena Hotel.

On arrival, the Prime Minister walked through the exhibitions mounted by RUFORUM partnering Universities and agricultural related organisations showcasing their latest technologies and innovations including RUFORUM, CABI, the National University of Rwanda, Nairobi University of Kenya, Bunda College University of Malawi and University of Swaziland. Makerere University Uganda exhibited various agro processed products from the Food Technology and Business Incubation Centre, animal and crop technologies that stunned conference goers.

Makerere's Deputy Vice Chancellor in charge of Finance and Administration Prof. Barnabas Nawangwe represented the Vice Chancellor. Prof. Bernard Bashaasha (Principal), Prof. Patrick Rubaihayo and Assoc. Prof. Patrick Okori from the College of Agricultural and Environmental Sciences (CAES) also attended. Others were Dr. Jessica Nakavuma (Deputy Principal) and Dr. David Owiny (Dean School Bio security, Biotechnical and Laboratory Sciences) from the College of Veterinary Medicine, Animal Resources and Biosecurity (CoVAB).

The Rt. Hon. Pierre Damien Habumuremyi then launched the RUFORUM book highlighting the network achievements over the past ten years of its existence titled, "DIRTY HANDS, FINE MINDS: The Story of an Agricultural Research and Training Network in African Universities", authored by Mary Anne Fitzgerald and Megan Lindow.

The book discusses RUFORUM programs drawn on solid international experience which identifies how Universities are central to achieving successful agricultural transformation. The book shows how the RUFORUM member Universities are building strong ties to business enterprises to provide role models, case studies and enhancing opportunities. The book also highlights collaborations among RUFORUM Universities that have given students, staff and more importantly farmers access the knowledge and facilities within those Universities.

Prime Minister, Pierre Damien Habumuremyi later handed over IMPRESSA awards to Africa's top three research scientists whose work had a continental impact. The first prize winner was Prof. Richard Kiprombeyi from Moi University Kenya. The second prize went to Prof. Robert Okalebo from Eldoret University Kenya as a distinguished scientist in the area of Soil Management in Africa while Prof.

Emmanuel Kaunda from Bunda College University of Malawi got the prize for developing the Fisheries and Aquaculture Centre that has benefitted many.

Two outstanding scientists in Agriculture in Rwanda were also awarded for improving peoples' livelihoods. The trophies were handed over by Rwanda's Minister of Education, Dr. Vincent Biruta. Dr. Bucyaca Charles, a lecturer in the Department of Agricultural Sciences was recognized for writing a paper on Soil Conservation Technology used by farmers such as cover terracing which has impacted on the farming communities in Rwanda. The other scientist was Dr. Kagaba Desire working with the Rwanda Agricultural Board. He was recognized for his work in Agricultural Watershed Management.

Five outstanding innovative farmers in Rwanda were also given trophies and award of 5000 Rwanda Franks to improve their farming activities in recognition of their distinguished efforts and commitment to improve the agricultural sector. The trophies were handed over to Ms. Twimbazimana Consolae, Mr. Simeo Gyizimana and Mrs. Uwera Flora among others by RUFORUM Board chairman Prof. Levy Nyagura.

In his opening remarks, the Prime Minister Rt. Hon. Pierre Damien Habumuremyi told participants that the mission and vision of RUFORUM was in line with that of the Government of Rwanda geared towards transforming the education system and improving people's livelihoods, " This meeting has given Rwanda a golden opportunity to celebrate achievements of RUFORUM for the past ten years and to witness the award ceremony to its outstanding farmers and Scientists", he said.

The Prime Minister thanked RUFORUM for taking a bold step to reach out and promote a broad agenda of not the "Ivory Tower Syndrome" but working in a partnership model that has changed many lives. He appreciated RUFORUM for making a difference in graduate training saying, over 20 Rwandese students had benefited, trained and returned home. He added that to-date RUFORUM support to agricultural research had reached to a tune of 9million USD with support from donors.

Rt. Hon. Pierre Damien Habumuremyi said over the past ten years much had been achieved through RUFORUM network Universities including the production of high performing graduates and research output that was responsive to national needs and development , " RUFORUM goal is in line with the Vision of President Kagame in what concerns the development of agricultural sector in Rwanda and the transformation of Africa, elimination of hunger and poverty", The Prime Minister reiterated.

He said Rwanda's next focus was to increase productivity and agriculture value chain and attract the private sector to improve agriculture that require agricultural education and a critical mass to transform agriculture. He pledged his government commitment to support the network activities.

He added that Government of Rwanda would like to be actively involved in the

network by linking Rwanda agricultural universities with private institutions, providing exposure to RUFORUM network facilities, accessing network centers of excellence, carrying out research and fighting pests and diseases among others.

The conference brought together, Permanent secretaries, Vice chancellors, Deans and Principals from the partnering Universities, Colleges and Faculties. The committee of Deans and Principal's held a Pre - Annual General Meeting and discussed various issues including the need to improve on the visibility and funding of the network activities, the relevance of the curriculum , graduate completion rates, governance issues, quality assurance and the proposed mobility program of Graduate Teaching Assistantship(GTA) among other things.

The idea of Graduate Training Assistantship (GTA) was submitted by RUFORUM Secretariat where it was noted that about three quarters of the Vice chancellors of the partnering Universities had signed a Memorandum of Understanding endorsing it as a good initiative.

Under this arrangement, the host university provides fellowships / student assistantship that will include waiver on tuition fees and all other related program fees. The hosting University also provides the staff member with research funds available at the University; have such students registered for a PhD or MSc and then fix the candidate on the timetable to teach at the host University as part of their contribution. The sending University on the other hand, will provide their staff or PhD student with return tickets and all related travel expenses including living out allowances during the mobility period.

The proposal was seen as a good initiative that would promote academic mobility among partnering Universities as part of the effort to train a pool of PhD level academic staff that will also promote regional integration and cross fertilization of expertise with the region.

Addressing Principals and Deans, the Chairman RUFORUM Board Prof. Levy Nyagura who is also Vice Chancellor University of Zimbabwe described the Deans as champions of research and implored them to support the GTA initiative saying, it was an indirect way of financing Postgraduate studies and a strategy of dealing with limited financial resources to support graduates.

"Let us have a common vision as RUFORUM family regarding uplifting each other in terms of academics. The bottom line is to accept the idea. We have not come up with implementation modalities. Secretariat will engage with you deans and prepare a dozzier to that effect. The Deans should bring suggestions of what they think should be done to make the scheme effective and efficient for the future academics.

"Prof. Levy Nyagura appealed to the Deans.

In the same forum, the Deans were also requested to ensure that Post graduate

students complete their studies within the stipulated rules and regulations. This followed the Deans and Principals committee meeting which raised concerns over students taking too long to graduate. RUFORUM Secretariate noted that Makerere had 56 projects but recorded very low graduate completion rates while the University of Nairobi was praised for the job well done.

The Board chairman asked Deans to consider themselves as responsible for creating a good academic environment for students to complete. "Deans should gauge the number of admissions vis-a-vis the number of supervisors and guide the system on what is possible regarding postgraduate admission and the existing capacity', The Board Chairman advised.

The conference was also punctuated by presentations from other agricultural organizations including ASARECA, CTA and CARDESSA. All RUFORUM partnering universities received membership certificates.

RUFORUM is a consortium of 32 member universities in Eastern, Central and Southern Africa. The Principals and Deans responsible for agriculture in these Universities are the main entry point of implementation and achievements of RUFORUM output and impacts in agricultural graduates, the university and sector at large in those countries.

Regular meetings of the Deans and Principals are a key channel for networking, sharing and lesson learning, collective discussion and agreements on regional initiatives that influence change for the better focus in the colleges, faculties and universities.

5.3: The 11th Biennial African Crop Science Society Conference held in Entebbe

The 11th African Crop Science Society conference was held on 14th-17th October, 2013 at Imperial Botanical Beach Hotel, Entebbe Uganda under the theme "Sowing Innovations for Sustainable Food and Nutrition Security in Africa".

The conference attracted a wider Africa and global participation of three hundred, thirty nine (339) participants from twenty seven (27) countries. The countries included the East African states, Mozambique, Zambia, South Africa, Malawi, Zimbabwe, Ghana, Nigeria, Mali, Ethiopia, Egypt, Cameroon, DR Congo Namibia and USA among others.

The conference was organised by Makerere University in collaboration with Regional University.s Forum for Capacity Building in Agriculture (RUFORUM), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), and the Presidential Initiative for Banana Industrial Development (PIBID). Other collaborators were the National Agricultural Research Organisation (NARO), National Agricultural Advisory Services (NAADS), African Forum for Agricultural

Advisory Services (AFAAS), National Crops Resources Research Institute (NaCRRI), National Environmental Management Authority (NEMA), African Agricultural Technology Foundation (AATF) and Busitema University.

Initially the conference was supposed to be hosted by Cameroon which bid in 2011. Four months to the conference, Cameroon stepped down and Makerere University stepped in to organise the conference.

The objectives of the conference were to emphasize the role of crop science research on providing for new and improved livelihood opportunities for farmers in Africa with a view to enhancing farmer incomes and food security. Further, the conference sought to provide an engaging environment between young and senior innovators in sowing seeds of innovation for sustainable food and nutrition security in Africa.

The conference was officially opened by the Commissioner for Rural Economy and Agriculture of the African Union H.E Rhoda Tumusiime who underscored the role played by Professional Societies and Associations in economic growth and transformation of communities and nations. Hon. Tumusiime acknowledged the challenges of sustaining professional associations and congratulated the Council of the African Crop Science Society (ACSS) and all its members for reaching this important milestone of hosting the 11th Biennial Conference and sustaining it for the past 20 years.

Hon. Tumusiime observed that agricultural innovation and adoption of technology for achieving food and nutrition security continue to encounter many challenges on the continent including low level of investment in research infrastructure, human capacities and technology markets.

“The adoption of appropriate technologies in Africa has not yet reached the critical level to significantly impact productivity on the continent. Farmers in Africa use less than 13 to 73 kilograms of fertilizer per hectare. In contrast, farmers in East Asia and the Pacific use 190 kilograms.” She decried.

She told participants that the simple application of fertilizers by farmers, improved seed through biotechnology application and access to irrigation will yield great progress that should be sustained by the appropriate policies, investment in rural infrastructure and access to land and local, national regional markets, demand driven development and dissemination of technologies along value chains.

She shared a success story of agricultural innovation and adoption in regard to New Rice for Africa (NERICA) in Benin where agriculture is contributing 32% of the GDP and employs 65% of the active population saying, the adoption of the technology was successful and did not follow the conventional process of assistance program and government actions but a result of the private sector through self-motivated entrepreneurs who pushed government to adopt new policies that

would be conducive to NERICA.

The Commissioner said Africa has the potential to achieve food and nutrition security through agricultural transformation. She described mega-trends including the exponentially rising population, the dynamic women and youth, the rapidly urbanizing countries as imperatives researchers should turn into opportunities by exploiting the tremendous potential that Africa is endowed with, particularly land.

“Agricultural technology and innovations have the potential to transform African agriculture. But only if we have strong structures and systems to support create and disseminate critical best practices and technological breakthroughs. She said.

Hon. Tumusiime said the African Union, through its flagship program, the Comprehensive Africa Agriculture Development Program (CAADP) accords a central place to agricultural research and technology generation and dissemination. “Achieving the Africa 2063 vision, the Strategic Plan of the African Union Commission for the period 2014-2017 adopted in May this year by the AU Heads of State and Government places on top human capacity development focusing on health, education, science, research, technology and innovation.” She pledged.

Looking at the adoption of agricultural technologies and innovations along value chains Tumusiime said the private sector has a key role because the demand of the private sector including agro industries, farmers, and finance and will appropriately target the input market regarding the efficient use of fertilizers, the management of the factors of production, the output market regarding post-harvest management, agro processing.

“Africa agriculture must no longer be seen as an informal investment but as a catalyst to create high income for the farmers to deliver particularly for women and youth. Agriculture must be seen as a formal business that contribute to food and nutrition security and create wealth attracting higher private sector investments”. She stressed

Hon. Tumusiime emphasized the role of human capital as one of the decisive factors of production in improving the welfare of poor people besides space, energy and cropland. She stated that the decisive factors are the improvement in population quality and advances in knowledge adding that Human capital is a crucial strategic factor for agricultural transformation as new technologies emerge, markets demand higher quality and safer products, and as consumers. requirements for quality and delivery time.

“We are also keen to see our Universities and other institutions of higher learning intensifying their efforts to produce entrepreneurs including agri-business oriented graduates and not just office bearers. The skilled population will be able to respond more on private sector demand for competent staff that can be competitive at

national, regional and global levels.”

She also said the development of ICT should be seen as an opportunity to create quick spillover in the adoption of agricultural technology, exchange of knowledge, and input and output market information.

The opening ceremony was also graced by the Minister of Agriculture, Fisheries and Animal Husbandry Hon. Tress Buchanayandi who challenged the young and senior innovators to innovate for a successful agricultural sector that addresses the needs of today and tomorrow.

The Vice Chancellor Makerere University, Prof. John Ddumba Ssentamu, acknowledged the pivotal role of Makerere University for the birth of the African Crop Science Society in 1993 and the university's continued role of supporting processes of steering it progress.

“The Society has served as a platform for mentoring many young scholars in the field of Agriculture including professionals in Crop and Animal Sciences, Environment and Soils, Food Science and Technology and Nutrition Sciences. On behalf of Makerere University, I would like to sincerely thank my colleagues for their efforts and time and for cherishing professionalism while at the same time building a platform to mentor young people”, The Professor appreciated.

Prof. John Ddumba-Ssentamu, appreciated the need for continued knowledge exchange among innovators from using various mechanisms including participation in conferences such as the 11th ACSS conference.

He observed that science led economic growth driven by innovations is the critical engine that has the potential to end hunger and poverty in sub-Saharan Africa adding that Conferences such as this one are the medium through which scientists and innovators present tested possibilities for the desired better Africa.

The Vice Chancellor said the conference was in line with one of Makerere University's core function, which is Research and Innovations. He told participants that the university aims at consolidating and enhancing its research profile and aspires to enhance transformation and utilization of knowledge, research and innovations.

“I recognize the need for an education system focused on improving agriculture as one of the special pillars that can deliver a better Africa. I am happy to note that the Ugandan Government is aware that the youth make up a great percentage of our population and has endeavoured to create special programmes for them focusing on agriculture and entrepreneurship.” He said

In his key note address, the Deputy Director FARA Dr. Ramadjila Tabo highlighted

stability, policy, science and technology as a pyramid for building the agriculture of the future as Africa remains below the bottom of the development pyramid.

Dr. Ramadjila Tabo said the challenge was more complex than merely increasing productivity to encompass increasing resilience, reducing waste and improving nutrition, “Innovation holds the key to finding the solution to this complex challenge. The exploitation of Science & Technology further holds key to accelerating agricultural transformation in Africa”. The key note speaker stated.

He also advised that producing game changing agricultural innovations requires that innovators exploit the global collaborations and public investment opportunities. He observed that to strengthen these innovations, it was imperative for Research & Development (R&D) funding to embrace long-term research engagements for better performance of the agricultural sector in Africa.

Five participants were awarded certificates and prizes for best presented posters and another five for the best oral presentations during the closing ceremony. F. Olubayo from University of Nairobi emerged the best overall presenter in orals on the paper titled “Enhancing food and nutrition security through adoption and up-scaling of sustainable technologies in the dry lands of Kenya”.

Prof. Bernard Bashaasha Principal Makerere University College of Agricultural and Environmental Sciences came second. He presented a paper on “Adoption and impacts of conservation agriculture: Quasi experimental evidence from East Africa”. The paper was co-authored by R L Ojok from Appropriate Technology Uganda, J Norton from the Department of Renewable Resources, University of Wyoming USA and D Peck and M Owori from the Department of Agricultural and Applied Economics University of Wyoming USA. Prof. Bashaasha presented the underlying principles of conservation agriculture, the research process and results of the study that was conducted in Eastern Uganda and Western Kenya.

Others were two winners from two universities of Mozambique who presented on “Grain yield stability of cowpea genotypes in contrasting environmental conditions in Southern Mozambique”. The fifth best oral presenter was from Kenya Agricultural Research Institute on, “Use of selected fungicides for the management of common wheat rusts in Kenya.”

A total of one hundred eighty (180) parallel session presentations were made by conference participants. The thematic areas covered in the presentations included agronomy, crop physiology and cropping systems, agricultural economics, post-harvest handling and food sciences, agricultural extension, education and capacity building. Other themes were on pest and weed management, strengthening partnerships for higher education in agriculture, crop improvement and genetics, soil and water management, environment, climate and agriculture, integrated agriculture and innovations, crop protection, integrated crops and livestock systems,

standards and policy.

The presentations addressed emerging issues of the contemporary research and innovation development including issues of mitigating environmental impacts of oil spillage, use of remote sensing and GIS tools for disease surveillance, exploring hydroponics for climate change adaptation, innovative approaches to disease, weed (e.g. Striga control, weed identification software) and pest management, and the use of molecular techniques to confer resistance. In addition, there were efforts to explore the medicinal value of non-cultivated plants previously regarded as weeds.

Health breaks were also dedicated to poster and exhibition interactions. Exhibitions were mounted by different universities and agricultural research institutions to showcase the latest technologies and innovations. Makerere University College of Agricultural and Environmental sciences exhibited different crop, animal and agro-processing technologies.

The next conference will be held in 2015 in Lagos Nigeria.

5.4: Makerere Vice Chancellor Visits MUARIK

Makerere University Vice Chancellor Prof. John Ddumba Sentamu Tuesday February 25, 2014 paid a visit to the University's Agricultural Research Institute at Kabanyolo (MUARIK).

He was on a fact finding mission to establish the status of the institute and his first visit to this University farm under the College of Agricultural and Environmental sciences (CAES)

The Vice Chancellor toured different enterprises including the piggery and Dairy units, the feed mill, the implement shed and combine harvester, the banana tissue culture laboratory, and cereals research laboratory. He also toured the 650 hectares of land owned by the institute among others.

Prof. John Ddumba Sentamu later held a meeting with Deans, Chairs, management and staff from CAES and MUARIK where they discussed the status of the institute and possible actions to improve its productivity.

In his remarks the Vice Chancellor, expressed happiness over the research and teaching of the post graduate programmes at the institute. He commended the soya breeding project, the banana tissue culture laboratory and the cereals research laboratory.

The Vice chancellor advised management to streamline issues of human resource and procurement and come up with a strategy to improve production. He pledged

to provide a conducive environment for teaching, research and production and ensure that there is effective communication on all university activities to make things move.

The Principal CAES Prof Bernard Bashaasha said MUARIK presents numerous opportunities given the large acreage of land for training and enterprises, proximity to urban area and other research institutes, endowed with a multidisciplinary academic and support staff , laboratory facilities, basic assets and infrastructure.

Other opportunities according to Prof. Bashaasha include a professionally prepared business plan that now requires updating and implementation, cooperation frameworks in form of MOUs with sister organizations like NARO, Uganda Police and Prisons and the good will and high optimism about the future of MUARIK.

Despite these opportunities offered by MUARIK, Prof. Bashaasha reported that the institute was not fulfilling its mandate due to lack of the required farm tools such as tractors and accessories, inadequate labour force where 70% temporary staff was recently cut off, lack of a research scientists , inadequate funding and security and land encroachment.

“We envisage having an institute that is inspirational to our students and staff. We seek your support while we plan to initiate and implement different programs including the development of value chains through public private partnership for soybean, maize, piggyery and poultry enterprises”. The Principal promised.

Other plans according to the Principal are to involve neighboring communities in out grower scheme type of engagement and to work with the Ministry of

Agriculture to seek resources from various organizations and to rehabilitate the Feed mill to produce quality feeds for MUARIK and for sale.

Prof. Bashaasha also unveiled plans to establish a tree nursery and to engage in supplying tree seedlings to large scale buyers like NAADS and DfCU to be spearheaded by the School of Forestry in conjunction with Makerere University tree planting association, rehabilitate the coffee gardens for training and farm production, rehabilitate the diary unit and enhance security of the institute by planting trees along the boundary.

Speaking on the research at MUARIK the Principal noted with concern that although the institute undertakes laboratory and field level research on crops, trees and livestock, over 18 years, the institute has never recruited a research scientist to steer research and innovations as expected. He described this as not consistent with a research based University and an omission that needs to be addressed.

“Our immediate plans are to reorganize the research function of MUARIK into

research programs led by program leaders. Enterprises on national strategic importance will be stand alone research programs while others will be approached as a group of enterprises for example soya bean program, rice program, coffee program, banana program and livestock among others” The Principal stated.

The Principal also reported that the soybean breeding program at the University had yielded six varieties supporting the soybean subsector in Uganda, Kenya, Tanzania, Mozambique and West Africa while the high adoption of Maksoy varieties was responsible for the increased commercialization of the crop and high demand by farmers and local factories that need soybean for vegetable oil, poultry feeds and food for home consumption.

“Because of breeding work here at MUARIK, soybean is no longer a minor crop but a crop of national strategic significance. Crops of national strategic importance are normally run as national programs to insure against unpredictable circumstances which may negatively affect them and the associated value chains, leading to national crisis.” Prof. Bashaasha said.

He enumerated some of medium to long term plans as including the recruitment of research scientists, shifting of the core functions and structures of CAES to MUARIK, increasing the number of value chains, research programs and activities and level of productivity on the farm.

It was also observed that when the University passed a resolution to cut off contract staff, 70% constituting the productive workforce lost their jobs leaving those paid by centre that are difficult to manage. To fill this gap, the college had revised it recess term curriculum where the first years would remain after recess term to continue with their projects.

Staff also noted that a professional MUARIK business plan was developed in 2010 where a proportion of the land would be put under commercial production but consultants were not paid. They requested the Vice Chancellor to help follow up on payment so as to enable management operationalise the plan.

Others expressed the need to have the Human Resource like Professors moved from the main campus and stationed at MUARIK if any development is to realized and this they observed would work if the college relocated to Kabanyolo.

There was also an observation that it was increasingly becoming an embarrassment for students from secondary and primary schools to come to learn from Kabanyolo and find nothing. Another suggestion was to have a private company formed from the University or community that would hire staff to run the production unit which could in turn attract funding from say NAADS.

Another proposal was to introduce incentives to members of staff and students

where teaching would be based on production units.

Members also suggested that in order to develop MUARIK there was need to employ a full time Director exempted from other duties like teaching, research and administration to give him or her ample time to write proposals and plan for the institute.

Following the University resolution to have staff hold meetings within the University, the Coordinator Continuing agricultural Education Centre (CAEC) Prof. Jacob Agea reported that the centre had been face lifted and implored the Vice chancellor to support the center by bringing some of the workshops of management team to the centre.

“We have a unit that can accommodate 33 people and look forward to the day we shall host you here with part of the management team .We can host them here especially those workshops you fear that directors can disappear from their rooms ,bring them here there is no way they can disappear”, Prof. Agea requested.

5.5: School of Forestry holds stake holders meeting

The School of Forestry, Environmental and Geographical Sciences on February 20, 2014 held a stakeholders meeting to formally brief the alumni and former leaders about the recent developments since the University turned collegiate.

The meeting was the first of its kind in the college since the restructuring process that breath life and evoked memories of the Makerere of the time, with far enriching and touching advise on how the school can improve on its curriculum, teaching, research and how to increase opportunities for students internship and employability as well as juggling academics and business for personal development.

The one day meeting was characterised by remarks, presentations, and plenary sessions centred on the University restructuring process, outputs and challenges; academic programs and research agenda in different units; strengths and weaknesses of the restructured units ; expectations and contributions from former leaders; roles and expectations of partners and general discussions.

The Dean School of Forestry, Environmental and Geographical Sciences(SFEGs) Prof. Mnason Tweheyo said the school was moving on well after restructuring . He said the staff had been so prolific and had written a number of grant wining proposals adding that in a period of three years the school had won more than 16 million USD and published more than 70 papers.

Prof. Tweheyo said that the meeting would help people to know what the school was doing and most importantly to know that the school produces quite a large

number of students. He reported that in the last three years the school produced more than 130 Master graduate students, more than 17 PhDs and more than 600 Undergraduates.

He however said the major constrain was few staff, dwindling funding from the centre and inadequate teaching space, laboratories, storage space but was optimistic that the University and other partners would come in to help.

“That is one of the reason we called this stake holders meeting. First of all most of the colleagues out there are not sure and think Forestry is lost. So it was important for people to know that the units are not lost but formed for better performance and synergy”, he said

Prof. Tweheyo told participants that the school was focusing its research in sciences in wood properties, remote sensing, tree genetics and improvement, environment, water quality research and climate sciences among others.

The Principal College of Agricultural and Environmental Sciences Prof. Bernard Bashaasha underscored the benefits accruing from the merger units including the creation of a multidisciplinary pool of expertise namely environmentalists, foresters, Geographers, food scientists and agriculturalists under one roof making the college a one stop centre for agricultural and environmental aspects.

“We are now able to support things from value chain perspective. So once you have all the disciplines then you can address the entire value chain, if we picked soya bean, we address the entire value chain,” Prof. Bashaasha said.

He however said management was trying to address the challenge of attitude change where some staff still look at themselves by discipline as agriculturalist, foresters, food scientists and environmentalists rather than a college.

Other challenges the management was trying to address he said include low graduate completion rates and supervision allowances, inadequate financial

resources and lack of general infrastructure such as teaching space and laboratories amidst the increasing number of programmes and students.

Prof. Bashaasha disclosed that the University had secured funding from the African Development Bank to construct a multipurpose teaching and research laboratory structure at Kabanyolo while the school of Food Technology had already laid a foundation for a new building to alleviate the problem of space.

“It will be our first building as we plan to shift the college. The contractors are done with the design. The structure will have lecture theatres, research laboratories, staff office, video conferencing hall, bank, staff canteen, amphitheatre and other

facilities”. The Principal stated.

In addition, he said a multipurpose laboratory was also being planned for construction supported by the African Development Bank that would accommodate all university units to address space problems.

The Chair Department of Geography, Geo Informatics and Climatic Sciences Dr. Fredrick Tumwine disclosed plans to start a new course of Bachelor of Sciences in Geography to have CAES owned students. The current students belong to the College of Humanities and Social Sciences and the college of Education and External studies formally under arts.

“We want students who belong to CAES because a BSc. Geography will be purely a science and not an art. So we shall cover new emerging aspects in a more detailed and practical manner like marketing, floods, landslides so that students who leave the university can help in solving problems in society”, Dr. Tumwine disclosed.

Dr. Tumwine said the course will have a course component of Military Geography targeting soldiers as a way of tapping into unutilised potential at the University.

“Someone who does this course can easily be a soldier because in the army you need specialised equipment which can monitor the environment and know how to read the maps .We need to coordinate with Soroti Flying school so that people get theory and go for practical at Soroti flying school. We have a cartography section but only lacks equipment to help in drawing maps.” Said Dr. Tumwine.

He said the Department of Geography and Environmental Engineering of West Point New York was very eager to have the course started and the Head of Department, Col. Thompson will be leading a team of five people to Makerere on the 17 and 21st March .

He said the course will have four options namely environmental geography urban geography human development and GIS and remote sensing and cartography in all other courses.

It was a fruitful day for most of the staff as the former leaders and alumni gave accounts of their experiences while at Makerere, and their own judgement of what had gone wrong and what should be done.

They observed that the opportunity to bind units was overdue and commended Makerere research as unchallengeable. They however noted a significant number of challenges could be solved internally while students send on internship failed in practical aspects.

The school was advised to embark on career guidance; keep in touch with

curriculum developers, primary and secondary schools and employment sector to evaluate the relevance of the programs; think of policy oriented research in national interest to attract funding; design graduate programs that cut across disciplines and school units.

Other pieces of advice include having collaborations and agreements with institutions that take on the students for practical training, orienting students before sending them for field work and ; improve on the introduction letters given by students seeking internship placement by borrowing from Uganda Christian University.

The staff was given tips on how to venture into business and at the same time serve the university as a way of diversifying their income and preparation for retirement. Among the prominent alumni were Prof. V. Mwaka, Prof. Kagenda Atwoki, Prof. E Tukahirwa, Prof. Kabogoza, and Dr. Festus Bagora.

5.6:CAES host the 6th International Nitrogen Conference (N2013)

The International Nitrogen Initiative (INI), African Nitrogen Centre, International Institute of Tropical Agriculture (IITA) and Makerere University College of Agricultural and Environmental Sciences hosted the 6th International Nitrogen Conference (N2013) in Entebbe, Uganda.

The 6th international conference came after the successful and influential conferences in the Netherlands, USA, China, Brazil and India. The common objective of these conferences is the design of more productive, economic, and sustainable food and energy production systems to meet the challenges of the growing global population in a changing environment.

The International Nitrogen Initiative is a global effort to optimize Nitrogen's beneficial role in sustainable food production and to minimize Nitrogen's negative effects on human health and the environment.

The 6th International Nitrogen Conference (N2013) was held on 18 – 22 November 2013 at Speke Resort and Conference Center in Kampala, Uganda under the theme „Let us aim for Just Enough N: Perspectives on how to get there for “too much” and “too little” Regions..

Over 150 delegates from more than 30 countries attended. These delegates included scientists, agriculturalists, environmentalists, industrialists, economists and policy-makers. The conference had detailed discussions on various sub-themes linked to Nitrogen management, including food security, human health, agriculture and the water cycle.

The conference culminated into a “Kampala Declaration” which has key messages for governments, international fora, business and civil society – on the challenges and the options for Nitrogen management. The specific messages for sub-Saharan Africa included Improving soil fertility status, nutrient use and supply, Acting on nutrient and fertiliser policy, Reducing Nitrogen's contribution to degradation of water bodies and air pollution.

The Global messages included Improving Nitrogen Management, Reducing Nitrogen losses from Agriculture, Reducing Nitrogen losses from industries, transport and energy sectors, Improving treatment of wastes and Informing individuals and institutions.

The document was signed by Prof. Mateete Bekunda who was the N2013 Conference convener, Dr. John Tenywa, the N2013 Chair of the Local Organising Committee, Mark Sutton, Chair of the International Nitrogen Initiative, Wilfried Winiwarter, Co Chair of the N2013 Declaration Drafting Group and N Raghuran, Co-Chair of the N2013 Declaration Drafting Group.

5.7: Climate Change Researchers hold dissemination workshop Nakasongola

Majority of Nakasongola residents are aware of climate change and its impacts but 33.6% of the population are doing nothing to cope, a new study conducted by Makerere University revealed..

This was revealed during the research dissemination workshop where Makerere scientists were sharing research findings with sub county and district leaders, environmental and NAADS officers, district planning, production and climate change units at the Nakasongola district headquarters on December 17, 2013.

The study titled, “ Perceptions of Climate Change /variability and its effects among small holder farmers in the dry land ecological zone of Nakasongola,” was conducted in 21 villages to assess the level of awareness of climate change and what farmers attributed to weather changes and how they were coping. Nakasongola was chosen because it is more vulnerable to climate change and being a dry land, has a challenge of less rainfall with high instances of drought.

This project is part of the major grant in the College of Agricultural and Environmental Sciences funded by the Rockefeller Foundation where sub grants were given to different scientists to contribute to the main project. The objective was to understand peoples. perception on climate change to give a basis to come up with interventions to help the communities.

The Lead Researcher from Makerere University.s Department of Forestry, Bio

diversity and Tourism Dr. Edward Mwavu reported that despite the fact that residents were aware of the changes in temperatures and rainfall manifested by frequent droughts and shorter rainfall seasons, a substantial percentage was doing nothing to cope with these changes.

“What is unfortunate is that when you look at the respondents, we had 33.6% who were doing nothing to cope with the impacts of climate change and this worries us a lot. If a person is doing nothing, he will have insufficient food, poor health, income and education hence a serious impact and burden to the district and national development plans,” Dr. Mwavu stated.

Other findings indicated that a section of people practicing adaptation strategies to deal with the impacts of climate change were finding challenges ranging from lack of information, easy access to credit, extension services, and would want improved crop varieties and livestock breeds, farm implements and transport network issues improved.

Dr. Mwavu expressed the need for policy makers and planners to come up with strategies to increase awareness on climate change and improve peoples. capacity to cope to avoid sinking further into poverty which may hinder government achievement of the Poverty Eradication Plan.

“Climate change is with us, so we have to find options to adapt .The district officers have to find ways of taking information to the communities using different channels and ensure that extension workers go through NAADS to preach the message of climate change adaptation”, the Lead Researcher said.

The District Environmental Officer Nakasongola district Kunobere James Bond agreed that Climate change variability in Nakasongola was vivid describing the Makerere report as a true reflection of what was on the ground.

Mr. Kunobera identified the major challenges in the district as lack of pasture for livestock due to the long dry spells, crop failure and emergency of termite infestation leading to loss of crops. Other challenges he said, were loss of diversified incomes from both crop, livestock and fisheries as these resources continue to dwindle.

“Due to failure of crop and livestock production there has been increasing poverty trends in the communities leading to increased theft and other crimes within the district. The other issue is loss of wood land because people are left jobless having failed in crop and livestock, they are resorting to charcoal burning at a high rate and we are loosing almost all the woodlands and about 80% has been lost in the last two decades”. The Environmental Officer said.

He said more emphasis is to be put on sensitizing the masses and using indigenous

knowledge from the other 70% who said they were doing something so that the 33% could fall suit. Other plans were to intensify efforts to mobilize resources and attract more funding for research geared towards climate change.

Mr. Kunobera called upon stakeholders for more research, documentation and dissemination of knowledge on climate change in Nakasogola , “I want to thank Makerere University for having given us the feedback because most partners and institutions do research which end up on their shelves as part of their accountability but we actually need such information and if brought back here it can be pushed to policy level and benefit the population”, he said.

Co - researcher and climate change expert from Makerere University’s Department of Forestry, Biodiversity and Tourism Dr. Micheal Mbogga explained that the current weather projections from the Meteorological Department were in line with what farmers in Nakasongola observed. One of the important things according this expert was the increasing drought and rain coming March or late.

“The two important trends are that the rains in September – October are becoming more intense than they used to be. So farmers should take advantage of the increasing rains in October. The other one is that of increasing temperatures in that farmers need to understand that temperatures are increasing and have ways and means of dealing with that at the household level”. He advised.

Dr. Mbogga observed that addressing the impacts of climate change should be a responsibility of everybody dealing with people and their livelihoods and not only those in climate change area.

“The impact is going to come all way from health, to affecting farmers yield, so anybody is affected for instance, we need to find ways of increasing use of fertilizers so that farmers can get better yields or even if it is going to be with disease and pest outbreaks, then we could look at immunization as one of the way farmers can deal with these changes”. The climate change expert noted.

He clarified that weather predictions from the Meteorological department should not be taken as exact as this is based on tools they have to tell how the future is likely to be and usually this information is given as a probability.

“So we need to help the communities to know the meaning of weather projections and advice the farmers because information on climate which is changing and we cannot say we know what is likely going to be tomorrow. The information that is given is just a guideline that can be used for handling and managing the risk”. Dr. Mbogga said.

Dr. Mbogga revealed that efforts were underway to transform the Meteorological department into an Authority to increase efficiency in records and processing and to

improve the reliability of the data provided. He re-emphasized that there was no place to find weather projections being 100% correct.

He informed participants that The Makerere University Climate Change centre for Research and Innovations (MUCCRI) had been established to help improve the climate science and knowledge to help in mitigation and adaptation as well as policy on climate change issues.

5.8: CAES students hold the 2014 exhibition

The Minister of State Minister for Fisheries, Hon Ruth Nankabirwa commended Makerere University students for the wonderful technologies and innovations pledging to set up demonstration gardens to upscale the technologies.

The Minister was on April 3, 2014 opening the 2014 CAES Student exhibition held at the University's Freedom Square under the theme, Youth Innovation: A key to Agricultural Development and Environmental Sustainability in Uganda”.

Hon. Ruth Nankabirwa congratulated students for putting up a good show describing the exhibitions as a hope for Uganda, “ I have seen hope for Uganda because of the kind of technologies and new ideas coming up in my head. The person who exhibited how we can use small fields to do ornamental agriculture, I want to move on with him so that I can have a demonstration at my home. My home receives a lot of important people and is on Entebbe road so whoever will come there will be able to see and I will always be your ambassador and advocate to explain where I got the idea”. Minister Nankabirwa said

She observed that the technologies and innovations at display can help the country solve the problems it is grappling with.

“The second person from the exhibition is the guy who exhibited how one can get two million shillings in a week in Hot pepper production and his capacity to market was so good because I was too quick to be attracted. The President has been talking about how possible it is for all households in Uganda to get 20 million shillings in a year. So this guy is talking about 2 million in a week, so he captures my attention and I have taken your phones and the four of you have to come here for my card so that we can do business”. She said

The students exhibited a variety of items ranging from value added products, machinery, good agronomic practices, organic conversion of dangerous weeds into useful compounds to control grain storage pests, nutrition and good health practices, culture and tourism, ornamental farming, soil conservation and different forms of eco friendly energy for sustainable use of the environment.

The Minister also congratulated and commended students for the good explanations and marketing skills.

“The student producing Groundnut juice was so quick to attract my attention. The first sentences he made was that the Groundnut juice is the first in the world coming from Makerere University, I was really excited and interested and it is for real, he talked about curing anaemia and confirmed that he is not speaking for the sake of the exhibition but he did research “.

Minister Ruth Nankabirwa however advised the University to enhance the coordination activities and disseminate information on the developed technologies for adoption. She said she expected to find a good number of the line ministries represented at the exhibition.

She said Government of Uganda resolved to increase support for higher education in recognition of the efforts Universities are undertaking in terms of reforms to ensure development relevance. She added that Government was fully committed to the promotion of science and technology through budgetary support, training and research.

Aware of the difficult conditions Universities operate in, Minister Nankabirwa said that policy makers together with partners, were advocating for increased support to higher education. She said limitations and the opportunity availed by the increasing demand for higher education require re- organisation to ensure efficiency and effectiveness; pooling resources, focussing on priorities and promoting quality and impact to attract support.

She pledged Government commitment to work with Universities to build human resource capacity to increase production and productivity, agro processing and enterprise efficiency.

Speaking on behalf of Makerere University Vice Chancellor, Prof. Johnny Mugisha explained that the purpose of the exhibition was to create and stimulate the interest of the youth in agriculture, sustainable natural resource utilisation and environmental management. At the end of this exhibition, he said, there would be improved and shared understanding of what needs to be done to strengthen Africa's ability for agricultural production and sustainable natural resource utilization that will lead to economic growth.

The Vice Chancellor reminded participants of the three major development challenges that plague development processes on the continent. These are: the weak and degraded human resources running various public and private sector enterprises; An increasing population largely composed of unemployed youth that is

prone to poverty, hunger and vulnerable to various natural and humanly instigated calamities and; a weak innovation capacity to support the transformation of the economies into knowledge based ones which could play more significant roles in global economy. .

“As a University our vision is to be the leading institution for academic excellence and innovations in Africa destined to fill the gaps and supply needed skills and competencies that our country.s human capital require to be more effective and efficient”, part of the speech read.

He said through the College of Agricultural and Environmental Sciences, the University had transformed its research and development agenda for client-responsiveness and shifted from outreach that portrays knowledge transfer to engagement and partnership with communities in Uganda to enhance agricultural development and sustainable use of natural resources.

5.9: Dr. Fred Kabi Shines in Bujumbura, Burundi

Makerere University Don has scooped the best scientific paper Award and Certificate of Appreciation in recognition for the best paper presentation during the 2nd ASARECA General Assembly and Scientific Conference that was concluded in Bunjumbura, Burundi.

A plaque and certificate signed by the Executive Director ASARECA Dr. Fina Opio was delivered to Dr. Fred Kabi of the Department of Agricultural Production last week after emerging overall best scientific paper presenter.

Dr. Fred Kabi emerged the best scientist after a stiff competition that attracted researchers from Eastern and Central Africa who showcased recent scientific advances in agricultural research for development in East and Central Africa and adjudicated by renowned scientists from the region.

The conference that took place in December 9- 13th 2013 was organised by the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) in collaboration with the Ministry of Agriculture and Livestock, and the Institute of Agricultural Sciences of the Republic of Burundi under the theme, “Transforming Agriculture for Economic Growth in Eastern and Central Africa.”

Researchers submitted abstracts and made presentations on six thematic areas including; Improving investments in Agriculture; Natural resources management; Increasing agricultural productivity; Markets and trade; Knowledge management for greater impacts; and Building capacity for agricultural transformation.

The competitions attracted participants from universities, national research institutions and generally all the National Agricultural Research systems (NARS) of ASARECA 11 member countries which included Burundi, The Democratic Republic of Congo, Eriteria, Ethiopia, Kenya, Madagascar, Rwanda, Sudan, South Sudan, Tanzania and Uganda.

Dr. Fred Kabi presented a paper out of his research titled, “Effects of harvesting *Gliricidia Sepium* at different cutting frequencies on Quantity and Quality of Herbage Biomass for Dairy Cattle Nutrition”.

The scientific paper revealed that *Gliricidia sepium*, a leguminous fodder at Kabanyolo whose frequency of harvesting was identified to be a critical management factor that influences its nutritional quality and enduring biomass production even during dry season, is a promising feed resource that should be targeted to revolutionise smallholder dairy productivity in Uganda.

The research revealed that 1.0 kg dry matter of *G. sepium* leaf meal harvested at cutting interval of 2 to 4 months contained more than the threshold of 3.9 g/kg DM of calcium and 3.0 g/kg DM of phosphorus recommended in commercial dairy meal needed to support a 500 kg dairy cow producing 15 litres of milk per day.

The study also demonstrated that leaf dry matter yield increased as cutting intensity decreased and ranged between 36.2 and 49.1 tonnes dry matter per hectare per year when planted at an intensity of 4 trees per square meter. These yields were about three times higher than what was earlier observed for *Calliandra calothyrsus* fodder tree species harvested at comparable stage of maturity at Kabanyolo.

The high coppicing ability, retention of leaves even during dry season, and tolerance to pests during dry season were responsible for boosting such high biomass yields of *G. sepium*. “This is a promising fodder tree resource that I have been working on at Makerere University Agricultural research Institute Kabanyolo (MUARIK) for over ten years now including research for my PhD. I worked with World Agro Forestry Centre (ICRAF) and realised that it yields 3-4 times more than the popular *Calliandria calothyrsus*. Dr. Kabi said.

He however said, that despite the many years of research after the introduction of the fodder tree species in Uganda and the positive attributes associated with the fodder tree species, farmers have not yet taken it up as a suitable source of protein to boost milk production.

As a result of the study findings, World Agroforestry Centre (ICRAF) has taken up the initiative to launch a campaign to publicise the fodder among smallholder dairy farmers spearheaded by the co- researcher Mr. Pius Lutakome who currently works with the organisation.

The 2nd ASARECA General Assembly and Scientific conference therefore provided a platform where scientists were able to showcase their recent scientific advances in agricultural research for development in East and Central Africa. It was also meant to provide lessons learnt and identify success factors regarding agricultural transformation. The conference meeting was to develop and strengthen partnerships in transforming agriculture; and to develop and adopt an action plan to influence agricultural transformation in Eastern and Central Africa. Indeed the G. sepum fodder tree species took the day. END

5.10: CAES participates in the MAK exhibitions on Presidential Initiative s

On 30th and 31st July 2014, the College of Engineering, Design, Art and Technology (CEDAT), College of Veterinary Medicine, Animal Resources and Bio security (CoVAB), and the Food Technology Business Incubation Centre in the College of Agricultural and Environmental Sciences showcased breakthroughs in research and innovations .

The grand exhibition focusing on the theme, “The Presidential Initiative at Makerere University, An engine for realizing Vision 2040 through research and innovations” provides a platform to the Government, Development partners and the Parliamentary Committee on Science and Technology, staff, alumni, students and well-wishers to share ideas that would contribute immensely to the stewardship of the projects.

The Presidential Science Initiative sets the pace for Makerere University’s contribution to Vision 2040, and on 30th and 31st July 2014, presented an opportunity to receive feedback from stakeholders and other potential beneficiaries of the technologies developed in order to identify challenges and find solutions before the next implementation phase.