

MAKERERE UNIVERSITY
COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL
SCIENCES (CAES)

PRINCIPAL'S 2ND QUARTELY REPORT

MAY - AUGUST, 2014

Foreword

This is the Principal's 2nd Quarterly report that highlights the major activities and achievements in the College of Agricultural and Environmental Sciences (CAES) between May - August 2014. The report follows the earlier one for the period of August 2013 - April 2014.

The report covers the strategic areas as outlined in the University strategic areas and events within the prescribed period. These areas include the academic profiles mainly the offered and proposed programs in the college, student enrolment and graduation record. The report also outlines innovations in teaching and research, resource mobilization and collaborative efforts as well as knowledge sharing and transfer to society.

Abbreviations

AfDB	African Development Bank
ARI	Regional PhD program in Agricultural and Rural Innovation
ACSS	African Crop Science Society
CAES	College of Agricultural and Environmental Sciences
CHS	College of Health Sciences
CoBAMS	College of Business and Management Studies
NARO	National Agricultural Research Organisation
NAADS	National Agricultural Advisory Services
NaCRRI	National Crops Resources Research Institute
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
NEMA	National Environmental Management Authority
SAS	School of Agricultural Sciences
SFTNB	School of Food Technology, Nutrition and Bio engineering
SFECS	School of Forestry, Environmental and Geographical Sciences

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Introduction

Makerere University College of Agricultural and Environmental sciences (CAES) is one of the nine colleges of Makerere University. It was formed by the integration of the Faculty of Agriculture, Faculty of Forestry and Nature Conservation, Makerere University Institute of Environment and Natural Resources (MUIENR) and the Department of Geography.

Currently, CAES comprises three schools, i.e. School of Agricultural Sciences, School of Food Technology, Nutrition and Bioengineering and the School of Forestry, Environmental and Geographical Sciences.

Each of the Schools is made up of departments which administer and deliver academic programmes at undergraduate and graduate level as tabulated below:

Table .1 : CAES schools and departments

College	Schools	Departments
College of Agricultural and Environmental Sciences(CAES)	School of Agricultural Sciences	Agricultural Production Agribusiness and Natural Resource Economics Extension & Innovations
	School of Forestry, Environmental and Geographical Sciences	Forestry, Bio-Diversity and Tourism Environmental Management Geography, Geo Informatics and Climatic Sciences
	School of Food Technology, Nutrition and Bio-engineering	Agricultural & Bio systems Engineering Food Technology and Human Nutrition

The college has two institutes that handle research. These are Makerere University Research Institute Kabanyolo (MUARIK) and Makerere University Biology Field Station (MUBFS). The college has 14 centers serving as a base for knowledge transfer partnerships.

Vision: “To be a leading institution of academic excellence and innovations in Africa”.

Mission: “To advance training, knowledge generation and service delivery in order to enhance agricultural development, sustainable natural resource utilization and environmental management.”

1.0: Teaching and Learning

1.1: Programs offered in CAES

CAES offers 14 undergraduate, 30 graduate programs, 12 in SAS, 12 in SFECS and six in SFTNB

Table 2: Programs offered in CAES

NO .	PROGRAM CODE	NAME OF PROGRAMME	DURATION
		SCHOOL OF AGRICULTURAL SCIENCES	
		Undergraduate programmes	
	BHOT	Bachelor of Science in Horticulture	3 Years
	BAGR	Bachelor of Science in Agriculture	4 years
	BLUM	Bachelor of Science Land Use and Management	3 Years
	BAGM	Bachelor of Agribusiness Management	3 Years
	BARI	Bachelor of Agriculture and Rural Innovations	3 Years
		Graduate programmes	
	MCRP	Master of Science in Crop Science	2 Years
	MANL	Master of Science in Animal Science	2 Years
	MSOL	Master of Science in Soil Science	2 Years
	MSPB	Master of Science in Plant Breeding and Seed Systems	2 Years
	MIWM	Master of Science in Integrated Watershed Management	2 Years
	GAPM	Post Graduate Diploma in Animal Production and Marketing	1 Year
	MAAE	Master of Science in Agricultural and Applied Economics	2 Years
	MABM	Master of Agribusiness Management	2 Years
	MAEC	Master of Science in Agricultural Economics	2 Years
	MAGE	Master of Science in Agricultural Extension/ Education	2 Years
		PhD in Agricultural Extension Education	3 Years
	PARI	PhD in Agriculture and Rural Innovations	3 Years
	PAGR	PhD in Agricultural Economics	3 Years
	PPBB	PhD Plant Breeding and Biotechnology	3 Years
		SCHOOL OF FORESTRY, ENVIRONMENTAL AND GEOGRAPHICAL SCIENCES	
		Undergraduate programmes	
	BTM	Bachelor of Tourism	3 Years
	CFP	Bachelor of Science in Conservation Forestry and Products Technology	3 Years

	SEF	Bachelor of Social and Entrepreneurial Forestry	3 Years
	BVS	Bachelor of Environmental Science	3 Years
	BMET	Bachelor of Science in Meteorology	3 Years
		Geography as a service subject	
Graduate programmes			
	MAGE	Master of Arts in Geography	2 Years
	MSFO	Master of Science in Forestry	2 Years
	MSFO	Master of Science in Agroforestry	2 Years
	MSFO	Master of Science in Forestry	
	MENR	Master of Science in Environment and Natural Resources	2 Years
	MALU	Master of Science in Land Use and Regional Development	
	PGEO	PhD in Geography	3 Years
	PHENV/P ENV	PhD in Environmental Sciences	3 Years
	PHFO	PhD in Forestry	3 Years
	DEIM	Post Graduate Diploma in Environmental Information Management System	1 Year
	DEIA	Post Graduate Diploma in Environmental Impact Assessment	1 Year
	DIME	Post Graduate Diploma in Meteorology	1 Year
SCHOOL OF FOOD TECHNOLOGY, NUTRITION AND BIO ENGINEERING			
Undergraduate programmes			
	BAGE	Bachelor of Science in Agricultural Engineering	4 Years
	FST	Bachelor of Science in Food Science and Technology	4 Years
	HUN	Bachelor of Science in Human Nutrition	3 Years
Graduate programmes			
	MFST	Master of Science in Food Science and Technology	2 Years
	MAEN	Master of Science in Agricultural Engineering	2 Years
	MHMN	Master of Science in Applied Human Nutrition	2 Years
	PFST	PhD in Food Science and Technology	3 Years
	PAHN	PhD in Applied Human Nutrition	3 Years
	PHAE	PhD in Agricultural Engineering	3 Years

1.2: Student enrolment in CAES

SCHOOL	PROGRAM	YEAR 1	YEAR 2	YEAR 3	YEAR 4	TOTAL	
SAS	1. BAGR (BSc. in Agriculture)	42	53	46	60	201	
	2. BARI (Agricultural and Rural Innovations)	92	88	89		269	
	3. BAGM (Agribusiness Management)	61	64	79		204	
	4. BLUM (Land Use & Management)	33	24	33		90	
	5. BHOT (Horticulture)	12	09	10		31	
	Masters programs						
	1. MSOL (MSc. Soil Science)	07	01			08	
	2. MSPB (MSc. Plant Breeding & Seed Systems)	06	06			12	
	3. MAAE (MSc. Agricultural and Applied Economics)	11	03			14	
	4. MABM (MSc. Agribusiness Management)	03				03	
	5. MAEC (MSc. Agricultural Economics)	08	01			09	
	6. MAGE (MSc. Agricultural extension & Education)	05	03			08	
	7. MANL (MSc. Animal Science)	03				03	
	8. MCRP (MSc. Crop Science)	21	05			26	
	PhD programs						
	1. PARI (PhD. Agricultural & Rural Innovations)	05	15			20	
	2. PDAE (PhD. In Agricultural Economics)	00	01			01	
	3. PHAG (PhD. In Agriculture)	01	03			04	
	4. PPBB (PhD. Plant Breeding & Biotechnology)	04	01			05	
	SFTNB	1. BAGE (Agricultural Engineering)	21	23	25	18	87
		2. BSHN (Human Nutrition)	32	38	22		92
		3. BFST (Food Science & Technology)	22	21	24	26	93
	Masters programs						
1. MAEN (MSc. Agricultural Engineering)	04				04		
2. MFST (MSc. Food Science & Technology)	06	03			09		
3. MHMN (MSc. in Applied Human Nutrition)	13	02			15		
PhD programs							
1. PFST (PhD. Food Science & Technology)	01				01		

SFEGS	1. BCFP (Conservation Forestry & Product Technology)	69	68	39	43	219
	2. BFOR (Forestry)					
	3. BSEF (Social & Entrepreneurial Forestry)	30	25	36		91
	4. BEVS (Environmental Science)	43	65	70		178
	5. BMTE (In Environment)					
	6. BTOU (Tourism)	236	207	170		613
	7. BMTE (Science in Meteorology)	16	20	04		40
	Masters programs					
	1. MSAG (MSc. in Agro forestry)	01				01
	2. MSFO (MSc. Forestry)	01	01			02
	3. MENR (MSc. In Environment and Natural Resources)	51	36			87
	4. MIWM (In Integrated Watershed Management)	03	01			04
	PhD programs					
	1. PHFO (PhD. Forestry)	01				01
	2. PHENV (PhD. Environment)					
	3. MSAG Geography	07	03	03		13
Source : CAES Registrar's office and CAES Prospectus 2014-2018		864	787	647	147	2,458

1.3: Student graduation record

About 400 students from the College of Agricultural and Environmental Sciences were conferred degrees and awarded Diplomas at the Makerere University's 64th graduation ceremony held on Thursday January 30, 2014. The Principal CAES, Prof. Bernard Bashaasha 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 300 with Bachelors degrees in various disciplines.

1.4: Proposed programs

The curriculum was reviewed to integrate climate sciences to mitigate impacts of climate change both at undergraduate and graduate level. Short courses were designed awaiting approval of the university authorities for implementation. Other two programs in the pipe line in the School of Food Technology, Nutrition and Bioengineering are:

1. BSc. in Water and Irrigation Engineering which is in its final stages of approval by Senate.
2. BSc. in Bio process engineering which is also in advanced stages of approval
3. The Department of Environmental Management (DEM) is proposing the following courses:
 - i. Environmental Impact Assessment and Auditing Certificate course. A 3 module course. Duration 1 month. Intended target

- group(EIA Practitioners, District Environment Officers, Public Health Officers, Factory Inspectors)
- ii. Environment and Natural Resources management course(District Environment Officers, municipal Environment Officers, Local Government Environment Offices, EIA Practitioners)
 - iii. Looking into the possibility of expanding the Undergraduate and postgraduate programmes to cope with the increasing public demand in the country for training in Environment and Natural Resources Management.
 - iv. The Department of Geography is in the process of starting a masters course in Disaster Risk Reduction and Management (DRRM) to help in strengthening links with government organizations such as Department of Geological Surveys and mines; Office of the Prime Minister (OPM), National Environment Management Authority (NEMA), Meteorology Department, Population Secretariat (POPSEC), Ministry of Healthy (MOH) and Ministry of Disaster and Preparedness.

2.0: Innovations in Teaching and Learning

2.1: Agriculture students flagged off to Israel for 11 months paid internship

On 9th September, 2014, about 200 students from Uganda's public universities were flagged off to Israel on 11 months paid internship by the President of Uganda H.E Yoweri Museveni at a ceremony that was held at Kyambogo University. The students were drawn from Makerere, Kyambogo, Busitema, Busoga, and Bishop Stuart universities as well as Bukalasa Agricultural College.

About 55 of these were from Makerere University College of Agricultural and Environmental Sciences. This is the second batch of students from Makerere University to head to Israel, after the previous cohort of 41, who completed their internship recently and have just returned home. That cohort also produced the best three students, making Uganda the best. At least 1,100 students from 17 countries worldwide are attaining modern agricultural skills in Israel.

In 2013, Makerere University signed a memorandum of Understanding to be part of the Israel Agro Studies International Internship Program. 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.

3.0: Research Output and Innovations

3.1: Don scoops the best scientific paper Award and Certificate

Dr. Fred Kabi from the Department of Agricultural Production 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 Opiyo were delivered to Dr. Fred Kabi in June 2014 following 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. 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 endurable biomass production even during dry season, is a promising feed resource that should be targeted to revolutionize smallholder dairy productivity in Uganda.

Dr Kabi had worked on this project at Makerere University Agricultural research Institute Kabanyolo (MUARIK) for over ten years including his research for PhD with World Agro Forestry Centre (ICRAF) and realised that it yields 3-4 times more than the popular *Calliandria calothyrsus*.

3.2: Earthworm breeding starts

Scientists at the Department of Agricultural Production 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.

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 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.

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.

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. This innovation was staged 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.

3.3: Food scientists start making Groundnut juice.

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

Matindo explained that he realized 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. He decided to develop a product that can be consumed by all classes of people and started in March 2014 under the supervision of Professor Archileo Kaaya.

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. Red groundnuts are used but they are not crashed. 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. They are sold, dried and roasted and these are also rich in fats, protein and fibre.

James Matindo is fourth year Government sponsored student undertaking a Bachelor of Science in Food Science and Technology. In 2013, 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.

4.0: Resource Mobilisation and Collaborative efforts

4.1: DVC (AA) visit Nyabyeya and Budongo field stations

On 8th August, 2014, CAES and University Management team led by the Deputy Vice Chancellor Academic Affairs (DVC(AA), Dr. Ernest Okello Ogwang visited Nyabyeya Forest College and Budongo Conservation Field Stations .This was the second visit following the one on 5th July, 2014 that was led by CAES Principal.

The purpose was to interact with the management of the two field stations and CAES to discuss modalities of formalising their relationship with Makerere and also plan on improving the infrastructure such as students' accommodation and other training needs. The visit also coincided with the students' recess term activities where student would have an opportunity to interact with the University officials.

The team visited facilities for training and held meetings with different stakeholders. It was noted that the field sites had both challenges and opportunities for harnessing for improved training.

Key on the agenda was the challenge of space and equipment visa vis the increasing student enrolment. Other challenges included inadequate transport, water, sanitation and health facilities. It was also noted that the working relationship with the two field stations and Makerere University was based on historical and individual friendship hence unsustainable. It was agreed that there was need to formalize the relationship through Memorandum of Understanding (MoU) or other appropriate frameworks.

It was noted that Makerere University owned an incomplete building (dormitory) at Nyabyeya Forest College that can accommodate 45 students. In 2000, the University got a grant from NORAD to construct this dormitory but after a few months of its occupation it caught fire. The university embarked on the rehabilitation through a government contractor but the project stalled in 2013. Members agreed that there was need to identify the sources of funding to complete the building to ease accommodation pressure.

It was further noted that there was need for the University to make investments at Budongo Conservation Field Station to improve on students' accommodation, water supply, sanitation facilities and waste management. Members proposed a joint funding between Makerere University and Budongo Conservation Field Station to put up a joint accommodation facility to serve both the Budongo scholars and students of Makerere University. It was agreed that a Tripartite MoU Makerere University, NFA and Budongo Conservation Field station should be drafted to formalize the relationship with Budongo Conservation Field Station

It was further agreed that another visit should be organized for other university officials to see what is on the ground so that budgetary decisions are based on experience and informed positions.

4.2 : AfDB –HEST Program Coordinating team from the MoES visit MUARIK

A Coordinating team for the AfDB –HEST Program led by Mr. John Omeke the Project Consultant, HEST Ministry of Education and Sports visited Makerere University Research Institute Kabanyolo on 3rd September, 2014 to look at the site for the proposed new Administrative and Teaching block, the Dairy value Chain and old laboratories that needed renovation.

Other members included were Fuuna Paul Representative of the Director Estates and Works Department, Makerere University and Kabuye Matia K Senior Economist, Makerere University Planning and Development Unit

The team toured the site of the Initial Administrative and Teaching Block at MUARIK, the Old Animal Science Laboratory, and Dairy Value Chain structures, the Feed Mill and grain silos.

Mr. Omeke informed members that the project was going to construct facilities, renovate others, supply equipment and offer other services. He also reported that there will be an official launch of the project at the end of September, 2014 and that under this project, 8 Masters and PhD students will be funded to be trained by Makerere University. He also reported that the AfDB was collaborating with CIAT to supervise these students. He further said that Kabanyolo will be the Centre of Agricultural Research and Teaching in Uganda.. Besides the above planned projects at Kabanyolo, the college was also expected to benefit from the proposed structures at the main campus.

CAES team was asked to provide the equipment specifications and appoint someone to coordinate, interface and ensure information flow with the Coordinating team of AfDB –HEST MOES. Members were informed that the beginning of the procurement process for civil works would be between AfDB, Estates and Works and Planning Units but the ministry will advertise and when bids are returned, CAES representatives would be invited during the evaluation and implementation.

4.3 : A quadripartite MoU to enhance Tororo Fertilizer production signed

On 19th June, 2014, the Vice Chancellor Makerere University, the Principal CAES and other government officials visited China Agricultural University on the proposed project to enhance fertilizer production in Tororo district.

Makerere University signed a Memorandum of Understanding to operationalise the “Carbonatite Comprehensive Industrial Development Project” in Sukulu Hills Tororo, Uganda that will manufacture phosphate fertilizers among other products.

The parties involved include the Ministry of Agriculture, Animal Industry

and Fisheries (MAAIF), South China Agricultural University (SCAU), Makerere University (MAK) and Guangzhou Dongsong Energy Group Company Ltd.

The Hon. Minister of Agriculture, Animal Industry and Fisheries Hon. Tress Bucyanayandi signed on behalf of MAAIF; Prof LIAO Ming, Vice Chancellor of South China Agricultural University signed on behalf of SCAU; Prof. John Ddumba-Ssentamu, Vice Chancellor Makerere University signed on behalf of MAK and Mr.LV Weidong, Chairman of GuangZhhou Dongsong Energy Group Company Ltd signed on behalf of Dongsong.

At Makerere University, the MOU will be implemented through the College of Agricultural and Environmental Sciences (CAES), which was represented by the Principal, Professor Bernard Bashaasha at the signing ceremony.

5.0: Outreach activities

5.1: CAES Holds MUARIK open day to end recess term activities

The college successfully held a field day to mark the end of recess term activities at MUARIK on Friday 8th August, 2014. The function was graced by the Executive Director NAADS, Dr. Samuel Mugasi who was impressed by the students' technological presentations.

Over fifty First Year Students of Agriculture, Food Science and Technology, and Horticulture at the Makerere University Agricultural Research Institute Kabanyolo (MUARIK) mounted various exhibitions on what they had learnt during the recess term. The exhibition held after a 10-week residential Internship at MUARIK gives First Year students the perfect platform to demonstrate to their peers, lecturers, prospective employers and members of the general public all the skills they have been taught during the intense theoretical and practical sessions.

The areas covered included Plant Tissue Culture, Nursery Bed Establishment, Mushroom Cultivation, Artificial Colostrum Making, Urea Molasses Mineral Block Making, Compost Manure Making, Soil Fertility Testing as well as the Use of Ox Ploughs. The Students also went on to exhibit skills in Soil and Water Conservation in Banana Plantations, Raised-bed Vegetable growing, Poultry Management, Feed Mixing, Silage Making, as well as knowledge of diseases that affect pig production like African Swine Fever.

On the Human nutrition front, students of Food Science and Technology educated their audience on the importance of good nutrition and thereafter invited all present including the Chief Guest Dr. Mugasi to have their Body Mass Index (BMI) and Blood Pressure checked. At the end of the exhibition, the students shared tips on how to turn juice making into a profitable business and thereafter participants were treated to a demonstration of the Mobile-fruit processor in action.

Representing the CAES Administration, the Head, Department of Agricultural Production Dr. Denis Mpairwe congratulated the Internship coordinators Dr. Wasswa and Dr. Sadhat Walusimbi upon a job well done. He further commended the students upon their active participation and display of keen interest in all activities they were engaged in.

5.2: Workshop on the Intergovernmental Panel on Climate Change 5th Assessment Report held.

The two day outreach event to disseminate the Inter governmental Panel on Climate Change (IPCC) Fifth Assessment Report (AR5) was opened at Hotel Africana in Kampala on 21st, August 2014.

The function was presided over by the Minister of State for Water and Environment Hon. Flavia Munaba, the Vice Chancellor Makerere University,

The Ambassador Embassy of the Kingdom of Netherlands and the High Commissioner British High Commissioner in Uganda and CDKN Africa Regional Director Mr. Carl Wesselink.

The event was organized by the Ministry of Water and Environment and Makerere University College of Agricultural and Environmental Sciences with support from the Climate and Development Knowledge Network (CDKN). The CDKN was commissioned by the UK Department for International Development (DFID) to communicate the findings of the IPCC Fifth Assessment Report to policy makers, private sector, researchers and civil society in developing countries.

Hon. Flavia Munaba described as gratifying to have Uganda as one of the few chosen countries across the globe to launch another important IPCC report that further clarifies and informs the global community of scientific realities about climate change .

The two day workshop ended with the Young Scientist Seminar on Friday 22nd August, 2014 at Makerere University School of Food Technology, Nutrition and Bio engineering. The seminar attracted authors and experts in Climate Change, government officials and University staff , Masters and PhD students from Makerere and Kyambogo University under the theme, “ *The IPCC’s Fifth Assessment Report: What does it mean for Uganda’s Development?*”

In his key note address, the Acting Vice Chancellor Kyambogo University Prof. Eli Katunguka - Rwakishaya stressed that Climate Change is real evidenced by unpredictable weather patterns that have made agricultural production also unpredictable. He expressed the need for the youth to protect these valuable resources, work with experts to identify gaps in knowledge, provide proposals, come up with solutions and plans in all areas that affect national development. The workshop was also attended by representatives from the Ministry of Water and Environment.

5.3: About 300 UPDF officers undertake an Induction Training course in Agriculture.

About three hundred UPDF officers were received at Makerere University to undertake an induction training course in agriculture. They were residing in the Nkrumah and Nsibirwa Halls from 6th August to 20th August 2014. The participants arrived on Wednesday 6th August. 2014 and were treated to a welcome ceremony that was held in the University Main Hall starting at 3.00pm.

The UPDF officers were awarded Certificates of Attendance following a two - weeks Agriculture Induction Training at Makerere University College of Agricultural and Environmental Sciences. The certificates were awarded by the Chancellor Makerere University Prof. George Mondo Kagonyera at colorful ceremony held at the University Main Hall on Tuesday 19th August, 2014. The function was presided over by the Senior Presidential Advisor on

Defence and Security Gen. Caleb Akandwanaho who also doubles as the Coordinator Operation Wealth Creation (OWC), the Minister of State for Luwero Triangle Hon. Sarah Kataike Ndoboli, the Minister of Agriculture, Animal Industry and Fisheries, Hon. Zerubabel Nyiira and top UPDF officers.

The 14-day course included both theoretical class work and practical lessons where officers visited a number of demonstration farms in and outside Kampala. The officers covered modules in crop production (crop protection, fertilizer application and tree nurseries), animal production (bee keeping, poultry, goats and sheep management, piggery, dairy, animal feeds and feeding), agribusiness which covered farm accounts, record keeping, marketing and community empowerment. They also covered machinery, gender, climate change, trends in NAADS, monitoring agricultural programs and agricultural practices and related laws.