ACKNOWLEDGEMENT

The assistance of Irene Githongo in providing the initial data is highly appreciated and Janet Ndoro for Secretarial services.

We also acknowledge the support of Prof. Agnes Mwang’ombe, Principal, College of Agriculture and Veterinary Sciences, the Dean, Faculty of Agriculture, the Dean, Faculty of Veterinary Medicine and all Heads of Departments in the College.

This report was prepared by the members of the college Annual Report Committee

Prof. Kiana Gitahi

Prof. Jackson N. Ombui
Prof. Kogi Makau
Dr Demesi Mande
Dr G. Cheminingwa
Mrs Evelyn Ngunga

Chairman

Member
Member
Member
Member
Member

Contacts:
Principal
College of Agriculture and Veterinary Sciences
Upper Kabete Campus
P.O. BOX 29053, 00625
NAIROBI
TELEPHONE: Nairobi 2055126 (Wireless)
FAX: +2542055126
+2542063117

Email: principal-cavs@uonbi.ac.ke
Website: www.uonbi.ac.ke
**COLLEGE MANAGEMENT BOARD**

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<tr>
<td>Prof. Agnes Mwang’ombe, EBS</td>
<td>Principal, College of Agriculture and Veterinary Sciences</td>
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<td>Prof. Charles Mulei, Acting Dean, Faculty of Veterinary Medicine</td>
<td>Prof. Stephen G. Kiama Acting Director, Wangari Maathai Institute for Peace and Environmental Studies</td>
<td>Prof. Robinson Kinuthia Ag. Dean, Faculty of Agriculture</td>
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<td>Prof. Seth Kisia Associate Dean, Faculty of Veterinary Medicine</td>
<td>Prof. David Mungai, Deputy Director, Wangari Maathai Institute</td>
<td>Prof. Michael Okoth, Associate Dean, Faculty of Agriculture</td>
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<td>Mr. George Ndiritu, College Bursar</td>
<td>Mrs Evelyn Ngunga, Acting Registrar</td>
<td>Mr. Stanley Hahanyu, College Auditor</td>
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Message from the Principal

I wish to take this opportunity to thank all the students and staff for fully identifying themselves with the College of Agriculture and Veterinary Medicine passionately referred to as simply “CAVS”. It is a formidable brand you are building. This has not come easily as staff have owned the University vision of “excellence”. This has greatly improved services and relations to and between staff and students. As a result, CAVS is attracting and retaining more students than ever witnessed before leading to the current student population of 2,783 which is four times the number of students retained in the college eight years ago. This growth of student population has equally attracted foreign students not only into the graduate programs but also in the undergraduate degree programs. The traditional CAVS programs are now attracting more school leavers with very little migration to other course on admission. Instead, CAVS is getting students migrating from other programs into the Agricultural, Veterinary and Environmental based degree programs. The college is continuously scanning the learning environment leading to reviewing/recasting or even initiating new degree programs. The support mechanisms which the college management has put in place are definitely making a difference. The students feel more empowered and valued as key clients in the college and are very confident in approaching their Lectures on Academic issues leading to very good transition/graduation rates. This situation can of course further be improved especially in the area of repeating and supplementary examinations. Indeed this empowerment has not stopped at Academic levels. Instead, CAVS students a well socialized, professionally focus and many times when not in Academics they are also busy participating in relevant professional related activities. These activities, to name just a few, include tree planting, tending tree nurseries, participating in professional and mentorship talks, outreach activities which cover herd health in various nearby counties, mentoring the young students in high schools or simply providing services as needed. CAVS Students are very actively engaged in sports and games leading to the high performance witnessed in this academic year. Great appreciation go to the Student games captains and CAVS Games Tutor. The college has continued to hire young brilliant staff members as Tutorial Fellows for staff development. Management appreciates the support and guidance provided by Senior Academic Members to the newly employed Academic staff.

College Management has been very clear in what is expected to be done to continue with this growth and this is articulated in the College Strategic plan which has been cascaded to all strategic administrative units. It is indeed our responsibility to continue interrogating these documents and make them living documents so that we can achieve our vision of making CAVS the place to be when it comes to issues of Agriculture, food and nutrition and Veterinary and environmental sciences. Inline with this, College Mangement Board took a retreat in august 2013 to formulate clear implementation plans which are time bound and results based. This was crucial as it is important as the student numbers grow there is also a high demand for resources and supporting facilities to be able to support and provide quality services. It is at this level that I take this great exception to appreciate staff who are writing winning grant proposals which bring funds into the college. Some of these funds do allow procurement of research equipment which support research and learning in addition to supporting research for graduate students. This has greatly increased the revenue and number of grants the college has attracted. The College continues to witness active participation in International, Regional and National Conferences by the same Scientists (who are also Academic Members of Staff) who have attracted Research grants. Some other staff have equally engaged in activities which are helping CAVS diversify the revenue streams. These include income generating activities which utilize the college assets and proving consultancy services. This revenue is supporting establishment of new facilities and revamping old ones to support experiential learning which contribute to the quality of our graduates. CAVS has enhanced indigenous and improved poultry production which is supported by hatcheries. The college has initiated short skills enhancement courses targeting small scale farmers to fulfill the mandate on contribution towards reduction of food and nutrition insecurity and poverty amongst the rural poor.

CAVS promotes her programs through web based technologies and participating in exhibition and shows and this goes along way in supporting learning even outside the campus. The college exhibited during the FARA Science Week in Accra Ghana, in RUFORUM Annual meeting in Rwanda and in several National events. The performance in the NITF in Nairobi was simply exemplary where CAVS was able to scoop 125 awards and 19 trophies in the various agricultural produce categories. This is purely due to staff commitment to the college core functions/mandate. I wish to reiterate that this growth still requires great commitment from staff as well as the establishment of more facilities to support quality learning.

Prof. Agnes W. Mwang’ombe, EBS, Principal, College of Agriculture and Veterinary Sciences

College Annual Report: 2012/2013
College of Agriculture and Veterinary Sciences

The College of Agriculture and Veterinary Sciences (CAVS) is located off Kapenguria Road, 15 Kms to the Northwest of Nairobi. As the University has evolved, so has been the college. The College was established in 1985 by the University Act and is one of the six colleges of the University of Nairobi. It comprises two faculties namely Faculty of Veterinary Medicine, Faculty of Agriculture and one institute, Wangari Maathai Institute for Peace and Environmental studies which were started in 1940, 1970 and 2009 respectively.

The Faculty of Agriculture is made up of four (4) departments namely Department of Agricultural Economics (AGECON), Department of Plant Science and Crop Protection (PS&CP), Department of Land Resource Management and Agricultural Technology (LARMAT), and Department of Food ScienceNutrition and Technology (FSN&T)while the Faculty of Veterinary Medicine has five (5) departments; Department of Veterinary Anatomy and Physiology (VAP) which is located at Chiromo Campus, and the departments of Animal Production, Veterinary Pathology, Microbiology and Parasitology (VPMP), Clinical Studies (CSD) and Public Health, Pharmacology, and Toxicology (PHPT)located in Kabete Campus. In addition, the College has several teaching and research farms and field stations located in Nairobi, Central, Eastern and Coast provinces.

CAVS supports quality and diverse academic programmes which include 12at undergraduate and several at postgraduate levels. These programs are implemented by well trained, experienced and committed staff which are attracting students not only from Kenya but also from the rest of sub Saharan Africa and beyond. These academic programs are supported by 212 Academic Staff, who are engaged in teaching, research and outreach activities in diverse areas. The academic staff are supported by technical and support staff. CAVS supports continued skills and professional capacity development of Academic staff which include training in proposal and scientific writing and PhD student supervision. This has enhanced their capacities and resulted in shortened completion time and also increased numbers of registered postgraduate students. The college continues to host professional, cultural and social activities that support production of more holistic and quality graduates.

CAVS research and outreach activities are focused around global, regional and national concerns and are leveraged on national goals as articulated in vision 2030 and regional and global guidelines namely Comprehensive African Agricultural Development Programme (CAADP) and Millenium Development Goals (MDGs). These research programs continue to grow and are clearly setting CAVS at a higher level in comparison to the other Agricultural institutions in the region. This has not come by chance but due to the academic staff commitment towards research excellence, teamwork, attitude shift and realignment towards multidisciplinarity and transdisciplinarity have greatly contributed to this success. CAVS has been able to engage comprehensively with other institutions leading to creation of several linkages which have been able to leverage for funds to support activities of national interest in the area of food and nutrition insecurity and poverty reduction. Cross cutting issues such gender, climate change, environment and HIV/AIDS are fully integrated in most of the research activities.

CAVS social responsibility programs are as diverse as the various scientific disciplines represented in this college. The college continues to actively participate and win awards and trophies in the Nairobi International Trade Fair through exhibitions and competition in various entries of farm produce/products. Environment is embedded in our academic and research activities. Besides planting trees in Ngong hills forest, CAVS has established botanical garden of indigenous medicinal trees and protected three riverines through annual tree planting in Upper Kabete.

VISION, MISSION, CORE VALUES AND OBJECTIVES

VISION
To be a universal centre of excellence in training, research, outreach and consultancy services in agriculture, veterinary, biomedical, environmental and natural resource sciences in order to realize sustainable and secure livelihoods.

MISSION
To pursue and maintain a world-class leadership role in the quest for knowledge by way of quality research, capacity building, consultancy and innovative outreach in order to contribute to agricultural productivity for poverty reduction and secure livelihoods through sustainable natural resources management.

CORE VALUES
The College of Agriculture and Veterinary Sciences is committed to realizing its vision and mission. It operates within certain treasured beliefs, which have contributed to its success. The college shall:

- Uphold professionalism and ethics in all its dealings with its stakeholders.
- Be accountable and transparent in all its operations.
- Uphold integrity, honesty and quality in training and all other activities.
- Promote participatory management and effective teamwork in all its activities and operations.
• Promote and maintain linkages with industry, other institutions and alumni.
• Uphold dignity of all members of staff and students.
• Recognize and esteem ideas and innovations.
• Committed to sustainable management of natural resources and promotes biodiversity at the local level

Strategic objectives
The strategic objectives of CAVS are:

1. To manage the college efficiently
2. To produce quality and holistic graduates in agricultural, veterinary and environmental sciences
3. Advance and consolidate scientific and technological innovations in agriculture, veterinary and environmental sciences
4. To enhance the competitiveness of CAVS as a centre of excellence in agricultural, veterinary and environmental sciences

GOVERNANCE
The Principal is the academic and Administrative head of the college and chairs both the College Management Board and the College Academic Board. The College Registrar is the Secretary to the committees. At all times, the college is guided by the university of Nairobi policies and practices. College Management Board and College Academic Board members participate in decision making regarding the core functions of the college.

Funding and financial management
The College has adequate funding to achieve its goals and aims and it has an adequate financial management system. Furthermore, the college has initiated several income generating activities to support its programs.

BURSAR OFFICE
Bursar’s Office is a section under the principal’s office that deals with management of financial resources of the College. The Section currently headed by Mr. Ndiritu has four other staff members namely: Paul, Monica, and Victor & Phane. We also have accounts assistants attached to our various outer stations who coordinate cash collection and banking.
Among others, the section is tasked with among other responsibilities, preparation of books of accounts, preparation of management report and management of fee collection and reporting in the College. The Section is also backed up in various Income Generating Units within the College by various accounts assistants who facilitates cash collection and banking on timely basis.

The College has improved in terms of fee collection over the last few years with overall collection topping up to in excess of 30 Million during the financial year 2013/2014 for Module I and in excess of Kshs 100,000,000 in the same period for Module II. The IGUs has also continued to improve during the same period with the performance for the last seven years as depicted below:-

<table>
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<tr>
<th>Years</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
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<tr>
<td>Revenue generated</td>
<td>33,288,665.45</td>
<td>31,098,802.43</td>
<td>47,150,098.42</td>
<td>47,896,711.10</td>
<td>59,159,496.86</td>
<td>75,563,522.90</td>
<td>89,778,982.20</td>
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The College has continued to reinvest its resources and diversify in its IGUs in the College and also in other outer stations with such investments as Indigenous Chicken and bee keeping to ensure sustained increase in revenue generation.
Programs
Programs are developed and reviewed based on needs assessment, government policy (vision 2030) and stakeholders’ input. The stakeholders’ who participate include employers, alumni and current students. Curriculum design and revision are done according to the quality management system based on ISO 9001 standard in which stakeholder participation is compulsory. The programs are rigorous enough and their depth and breadth befit the award of degrees. The major thrust of our programs is to ensure experiential learning and provide holistic training to students; all the academic staff are aware of this. Our programs are of high standard. This is reflected in the large number of our graduates who are absorbed by International Research Organizations, top international universities’ graduate schools, local research organizations, the public service and non-governmental organizations. Most of our programs are offered on full time, part time and open distance and electronic learning (ODeL) modes.

CAVS LIBRARY SERVICES

INTRODUCTION
This is a college library which is managed from the central administration by the Library department. The College Librarian is the head and answerable to the Director, Library and Information Service.
CAVs Library is centrally located and has three (3) floors hosting books on circulation, Reserve, Africana, journals, theses, computer laboratory, study carrels, adequate reading space, working area, offices, and other staff / users facilities.

INFORMATION RESOURCES
CAVS Library has adequate information materials for its entire community. They include:

- Print materials comprised of books, theses and journals which totals to about 60,000 titles
- Electronic materials includes electronic resources (e-books and e-journals), Digital repository that hosts our local content and includes theses, journal articles, conference proceedings, institution’s history, speeches, workshop papers etc. etc. and CAVS digital content stands at 8152 items
- By the end of financial year 2013/2014 CAVS had about 24 databases relevant to courses offered in this college.
- TEEAL (The Essential Electronic Agricultural Library) – This an offline database that provides access to about 200 full text articles from different journal titles and the host server has been in CAVS Library.
- OPAC- Online public access catalogue a tool that equips the users with enough information that enable them to identify, select, find and locate information materials on the shelves as well as e-resources.

CAVS library managed to acquire approximately 544 book titles in the 2013/2014 financial year comprised of donations, gifts and purchases.

Publishing Outreach Officer Mr. George Onyango, CABI Africa presents book gift to Mr. Harun Mugo, College Librarian, CAVIS

USER SERVICES
CAVS library offers the following services to the users:

- Information service desk - where users get assistance or are directed to where they can get the assistance.
- Circulation desk - This is where issuing, returning and reservation of print materials takes place.
- Online Searching - this takes place in the library computer lab. Users are allowed to do their own searching to our databases and can also be assisted in case they encounter difficulties by the E-resource assistant and computer lab technician.
- Training - for effective and efficient use of our e-resources the library trains the users on how to explore the online databases. In the last financial year CAVS Library was able to train three hundred and seventy two (372) users most of whom benefited during the CAVS Library Open Day/Open Access Week.
- Digital section - The Library also has established a CD based E-resources display in the Computer Lab with about 200 CDs for awareness and easy access to Information for our users.
- Study carrels - About seven (7) of them are operational and some of them are being used by postgraduates and members of staff.
- Reprographic services.

OTHER LIBRARY ACTIVITIES
To properly equip the library the following activities took place:

- Ordering of books which is done in collaboration of both the academic staff and students. One hundred and fifty titles (150) were ordered in the last financial year.
- Processing of Materials is a major activity in the library that ensures information materials get to the shelves in good time. In that year about three hundred and fifty (350) titles were processed.
- Shelving - This is an activity where all staff participate to ensure that the information materials are well arranged on the shelves for ease of retrieval.

TREE PLANTING
CAVS Library Staff participated in several Tree planting ceremonies which usually take place in different locations e.g Kanyariti, Kibwezi and Field station in order to make a positive impact on the Environment as they sharpen the students minds they also beautify the environment.
STAFFING
Library services are provided by a team of qualified personnel who possess either a Masters, Bachelors, Diploma or Certificate in Library and information science and are able to effectively and efficiently deliver service to the users. The library also has support staff who assist in the maintenance of the facilities.

Website: www.uonbi.ac.ke

COLLEGE HEALTH SERVICES UNIT HOST AN ALCOHOL AND DRUG ABUSE PREVENTION SENSITISATION MEETING

The University Health Services (UHS) is mandated to carry out programmes on Alcohol and Drug Abuse prevention, HIV/AIDS and Reproductive Health. The Student body helped to publicize the event and mobilized the students for the function. The principal’s office at CAVS sponsored the event. Talks were carried out from 4.30 – 6.30 P.M at the Tana Kitchen Hall. A total number of 82 participants registered for the sensitization.

The event began with prayers led by Brian after which participants were invited to give their expectations. Most of them expected information on classification of drugs of abuse, their effects, HIV prevention, what to do if one is HIV positive, how to help persons who are HIV positive. All facilitators were provided with the expectations so as to try and cover them in the presentations.

The opening remarks were given by the chair KCSO Carlton. He thanked the University Health Services staff for coming for the activity often in the college and stated that he would like more staff and students to be sensitized. He told the participants that the nature of their training makes it easy for them to streamline HIV in their work in the community. He also stated that alcohol and drug abuse had negative effect on the academic performance and work. She added that the talks should help equip them with the life skills.

During the sensitization event Dr. Gordon Ambayo gave the first talk on HIV/AIDS epidemiology; globally, nationally and Kenyan university trends on HIV/AIDS. His presentation was very extensive and emphasized on importance of knowing ones status so as to get early care and treatment. He also added that condom use played an important role in prevention of cervical cancer, unwanted pregnancies, HIV and sexual transmitted infections (STI’S) and that for the year 2012 the HIV prevalence has been higher in females at 8% and 4% for males. Male circumcision reduces by 60% the chances of HIV infection. He further said that HIV is preventable through behavior change and to follow the ABC rule (abstinence, being faithful and condom use) and encouraged participants to delay sexual debut. The presentation was also highly participative and participants asked several questions such as why the HIV prevalence in Nyanza remains high. He explained that that the cultural practices and male non-circumcision contributed to this.

Mr. Muthii talked about the importance of behaviour change saying that it can lead to improved quality of life. He also asked the participants to avoid risky behaviour such as multiple sex partners, men having sex with men, non consistent use of condoms, and cigarette smoking. Catherine Musyoka, a clinical officer and a clinical psychologist talked about the different categories of drugs and their effects as well as the signs of abuse. She mentioned some commonly abused drugs such as...
bhang, miraa etc. and explained the meaning and process of addiction. Some of the side effects of drugs were mentioned
such as the effects of miraa. She explained that bhang is sometimes put in tea or cakes and given to unsuspecting persons.
Participants were cautioned about using alcohol and drugs. She explained that drugs like bhang do not enhance memory
but destroy it slowly. She also said that the chances of being arrested, getting lung cancer through nicotine intake, domestic
violence, accidents and thefts are enhanced as a result of addiction. Musyoka explained the university alcohol and drug
abuse policy emphasizing that no one is discriminated against by the University Health Services when seeking treatment.

Dr. Monica Onyimbo led the house to the way forward about HIV and ADA prevention with Pauline Micheni moderating the
presentations; keeping the participants fully involved and warning them about peer pressure.
Dr. Sabina Wangia thanked the team and gave closing remarks by requesting the participants to practice what they had
learnt; she thanked the health services team, the participants for attending the event the principal’s office for the strong
support of the event, the student leaders for mobilizing other students, Pauline Micheni a nurse/counsellor for coordinating
the activities.

COLLEGE ICT OFFICE

About College ICT Office

The college ICT office is one of the UoN ICT Centre’s colleges and campuses offices. The office was established to offer on-campus ICT support services and to enforce related UoN ICT policies and standards in the college. At the college level, the ICT office operates under the office of the Principal. The office shares the same vision and mission as the ICT Centre Directorate and supports the college to achieve its vision and mission. The office’s vision and mission are;

Vision: “To become a world-class ICT function powering the university into academic excellence”.

Mission: “To develop, deploy and support innovative, quality and sustainable ICT solutions and services that meet the changing learning, teaching, research and Management needs of the University”.

Mr. Peter Kyalo Mulwa Chief ICT Officer in Charge

Overall Strategic Objective or Mission: To maximize student and staff productivity, enhance teaching and learning and improve quality of research through ICT

College ICT Services

The college ICT office in liaison with the office of the Director, ICT Centre and other sister ICT Centre sections offers the following on-campus ICT services among others;

a) Computer hardware and software support Services
b) Management Information Systems (MIS), Websites, Internet and email support services
c) Network infrastructure support services
d) ICT User Training Services
e) ICT Preventive & Maintenance Services
f) Management of the student computer laboratories
g) ICT technical consultancy and advisory services
h) Enforcing related University ICT policies and standards in the college

The ICT services are supported by qualified ICT staff who include Mr. Mulwa P. K., Chief ICT Officer in Charge, Mr.
Wahome E. T. and Ms. Laureen Amateshe, ICT Officers. Alongside these staff, there are also qualified computer laboratory
assistants responsible for manning each main computer laboratory who include, Ms. Mary Sikuku (FoA Computer Laboratory),
Ms. Hellen N. Ngamini (FoVM Computer Laboratory), Ms. Mary Eghwa (Library Computer Laboratory), Ms.
Christine N. Mutua (8-4-4 Computer Laboratory), and Ms. Olive O. Waithera (8-4-4 Computer Laboratory).

College ICT Infrastructure

The college boasts of the following ICT infrastructure which helps in integration of ICT in teaching and learning and which
College ICT office with support of the Principal’s office, Deans’ offices, WMI Director’s office, Chairmen’s offices and ICT
Centre Director’s office is committed to maintaining and improving for better ICT service delivery to both staff and students;

a) Campus Wide Network that run on fiber back-bone that interconnects all major buildings and departments in the
college
b) LANS in offices, lecture theatres, lecture halls and laboratories
c) Audio-visual systems in the lecture theatres, lecture halls and laboratories
d) Internet connectivity available for free to all valid UoN students and staff
e) Internet bandwidth at an average of 10mbps and expected to go up since the University is in the process upgrading the bandwidth
f) Video conferencing facilities in the Principal’s office and of the Dean, Faculty of Agriculture and Veterinary Sciences
g) Digital advertisement screens located at strategic locations in the college which help in information dissemination to students and staff among other clients
h) Thirteen (13) computer laboratories for both postgraduate and undergraduate students located in different departments and with a total of hundred and ninety seven (197) computers
i) The computer student ration of 1:8 which is expected to be even smaller in the subsequent years since the college management is committed to buying more computers and setting up more computer laboratories
j) Qualified ICT officers and computer laboratory assistants who provide immediate ICT support services to users in offices and in the computer laboratories
k) Process of acquiring Wi-Fi is at advanced stage and full implementation is expected to be completed in the 2014/2015 financial year. This will create hot spots in strategic locations in the college and improve Internet access to both students and staff.

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<th>S/No.</th>
<th>LOCATION</th>
<th>NO. OF COMPUTERS</th>
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<tr>
<td>1</td>
<td>FOA Undergraduate Student Computer Laboratory</td>
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<td>2</td>
<td>8.4.4 Students Computer Laboratory</td>
<td>40</td>
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<tr>
<td>3</td>
<td>CMAAE Students Computer Room &amp; Library</td>
<td>24</td>
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<tr>
<td>4</td>
<td>FOVM Student Computer Laboratory</td>
<td>12</td>
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<tr>
<td>5</td>
<td>Animal Production Student Computer Room</td>
<td>10</td>
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<tr>
<td>6</td>
<td>CSD Post-Graduate Computer Room</td>
<td>7</td>
</tr>
<tr>
<td>7</td>
<td>Veterinary Anatomy - Chiromo</td>
<td>18</td>
</tr>
<tr>
<td>8</td>
<td>PHPT Student Computer Room</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>FOA Postgraduate Computer Laboratory</td>
<td>5</td>
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<tr>
<td>10</td>
<td>LARMAT GIS Laboratory</td>
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<tr>
<td>11</td>
<td>College Library Student Computer Room</td>
<td>14</td>
</tr>
<tr>
<td>12</td>
<td>LARMAT Student Laboratory</td>
<td>1</td>
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<tr>
<td>13</td>
<td>A.N.P Computer Laboratory</td>
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Students in the Faculty of Agriculture Computer Laboratory
SPORTS FACILITIES AND EVENTS
Sports at the college are offered for both recreational and competition to enable all the Students to participate in sports. To achieve this college has the state of the art and well maintained Sports equipment and facilities. The college appreciates and values the importance of Sports and recreation; hence it has made Sports and recreation an integral part of the college activities. Below are highlight of some of the major events participated by our college teams.

College of Agriculture and Veterinary Sciences Fun Day
CAVS fun and Sports day was held on 7th December 2013. The event created an opportunity for the Students and staff to play various sports, socialize and have fun together in our excellent Sports complex. The event also created awareness on the importance of fitness among our staff and students, as a way of preventive medicine and management of most health problems. After the successful fun day the students and staff were treated to a grand luncheon of with three huge bulls slaughtered to crown the event.
The College of Agriculture and Veterinary Sciences men football team currently the top team in the Universities and Colleges Football League (UCFL) 2014. CAVS football team has made history by being in the first position on the league table for the first time after joining the league. The teams’ participation in the UCF league has provided our team and their colleague student’s football fans an opportunity to spend their weekend leisure time in a positive and healthy manner. The league has also tremendously reduced alcohol consumptions and use of drugs among the students through Sports participation. Because of its intensity it has helped the students to discover their talents in football.

CAVS teams participant in the Rapid Results Initiative (RRI) Inter – Campus Sport Tournament

The rapid results initiative (RRI) inter – campus sport tournament was held at the main campus on 20th & 29th September, 2013. Our College was represented by both students and staff teams in football (men & women), Volleyball (men & women) and Basketball (men & women). Our college football men team won the football match and was awarded the first position trophy, while our football women and volleyball men teams were awarded the second position trophies. Our college teams scooped a total of three trophies and were declared the best overall college. The teams were treated with a dinner to congratulate their excellent performance.

Prof. P.F.M. Mbithi, DVC(A&F) poses with CAVS team during Constitution of Kenya 2010 Sensitization program which incorporated sports and games as a way of reaching out to UoN staff.

Prof. Mwang’ombe’s Bull Match at the College Sports Complex: April 2014
The Faculty of Veterinary Medicine and Faculty of Agriculture teams in action at CAVS during the 2014 Prof. Mwang’ombe’s Bull Football Match.

The Principal and Ag. Registrar having a light moment with the CAVS Students during the 2014 Prof. Mwang’ombe’s Bull Football Match.

Prof. A. W. Mwang’ombe joins the Faculty of Veterinary Medicine team at the end of the football match at CAVS during the 2014 Prof. Mwang’ombe’s Bull Football Match.
Prof. A. W. Mwang’ombe joins the winning Faculty of Agriculture team at the end of the football match at CAVS during the 2014 Prof. Mwang’ombe’s Bull Football Match.

This year's Prof. Mwang'ombe's Bull Match was played in April 2014 at the College's sports complex. The annual event is her own initiative and innovation and involves football teams drawn from the college two faculties; Faculty of Agriculture and Faculty of Veterinary Medicine. This year the Faculty of Agriculture team emerged the winner. The College Principal thanked the students for the team spirit and discipline they exhibited throughout the match. She encouraged the students to have the same spirit in their stay in the University of Nairobi and put more effort in their studies. The students were thereafter given a dinner where they feasted on a bull provided by the principal.

**College annual external sports fixture to Mombasa**

The College of Veterinary & Agriculture Science sportsmen and women went for their annual external Sports fixture to Mombasa on 25th April 2014. Our teams participated in friendly matches with Mombasa Technical University and because of their consistent in training the team won the match. The annual external Sports fixture to Mombasa was an appreciation from the principal for the team’s excellent performance in Sports.

**CAVS teams participation in inter-campuses sports competitions**

Our college teams this year have participated in the various Inter- campuses events held throughout the year and in several friendly matches and they have worn almost all the matches played.
Prof. P.F.M. Mbithi, DVC(A&F) poses with CAVS team during Constitution of Kenya 2010 Sensitization program which incorporated sports and games as a way of reaching out to UoN staff.

**Kenya University Sports Association Women Annual Sports Championship**

CAVS women football team and other teams participated in the Kenya University Sports Association Women Annual Sports Championship held in March 2014 at Egerton University and the teams did extremely very well.

**Annual college sports corporate social responsibility activity / outreach to Mully Children’s Family (MCF)**

The College Sportsmen and Sportswomen visited children’s home with over 2500 children. The aim of visiting these disadvantaged children home was to; inspire the children that it is possible to make it to the University of Nairobi, mentor the children and share food and gifts with them, play various Sports and fun activities and socialize with the children. The CSR activity was truly rewarding and a great experience to the students.

**These Sports activities done at the College have:**

- Promoted the staff and student physical, mental, social, emotional fitness leading to healthy lifestyles hence increasing their productivity.
- Provided an excellent environment for our Students to improve leadership skills, Social skills, Inter personal skills and their self-confidence
- Provided an opportunity for our students to identify and develop their abilities and talents in Sports.
- Provided an opportunity for our students to spend their leisure time in a positive and healthy manner.
CAVS PERFORMANCE IN THE NAIROBI INTERNATIONAL TRADE FAIR 2013 -
In 2013 Nairobi International trade fair, the college participated in the livestock, poultry, farm produce and rabbit sections. The college won a total of 125 prizes and 20 trophies. The Veterinary farm presented a total of 14 cows from the four breeds which were entered into various classes for competition. These cows won 14 prizes- 4 first prizes, 3 second prizes, 5 third prizes and 2 fourth prizes. The Jersey cow, cow called Naomi number 560 was the champion and had the best udder and was awarded the ASK Medal for the Best Jersey Female breed. Another Guernsey cow which was first in her category was also awarded the Guernsey society Perpetual challenge cup. In the piggery section, the Veterinary farm entered a total of 19 pigs; 11 mature and 8 piglets. In this category, a total of 10 prizes were won, with 5 first prizes, 4 second and 1 third prizes. The pigs won 4 trophies namely; the Haig perpetual challenge cup for the best pair of baconers, Ashtead Cup for Champion female, Upland Bacon Factory cup for Best female and also the Stockman’s trophy.

In the poultry section the Veterinary farm and the Department of Animal production entered their laying hens and eggs into various classes. The Field station also entered their indigenous chicken which was the first time such chicken were entered in the trade fair. These layers, eggs and indigenous chicken won a total of 20 prizes; 14 first prizes, 4 second prizes and 2 third prizes. In this poultry section, a total of 11 trophies were won and these were: the Biodeal Cup A for the best lightweight commercial layers, Biodeal Cup C for the best medium weight commercial layers, The Kenchic C Cup for the best Indigenous hen, Kenchic C Cup for the best Indigenous trio, Kenchic M cup for the best three matched birds, Kenchic L Cup for the best trio, Kenya Poultry Development Co. Ltd Cup perpetual challenge cup for the best six hen eggs of any colour, Pirie perpetual challenge cup for the best exhibit in egg classes, The Poultry sub-committee perpetual challenge Cup A for the best three matched lightweight commercial layer, Wardle cup for the best three matched commercial layers and Winmil perpetual challenge Cup for single commercial layer.
In the farm produce and the rabbit section, the college had entered various farm produce that included vegetables, grass hay, seeds, flowers, bananas, cheese, butter and ghee. The departments that participated in this section included the Field station, Plant Science and Crop Protection and Food Science and Nutrition Technology. In this category, the college won a total of 74 prizes that included 32 first prizes, 25 second prizes and 17 third prizes. Two trophies were won in this category namely: The BASF(E.A.) perpetual challenge cup for the exhibitor gaining most points in the commercial fruits, vegetables, spices and herbs and S.K. Njuguna perpetual challenge cup for the exhibitor gaining most points in cut flowers. The department of Animal production had entered rabbits in various classes for competition. The rabbits won 7 prizes of which 6 were first and one second. The rabbit doe entered was the overall champion and won the ASK Perpetual challenge cup for the champion doe. This was the first time the college won a trophy in the rabbitry section.

The college also participated on the main University stand. In this year’s trade fair, three projects were presented. These included the Seed Enterprise Management Institute(SEMI) project for bean seed production that participated in the competition class 35 for the best stand exhibiting Agronomic Practices to enhance food production and security. The project was exhibiting the newly developed bean varieties. The Moringa oleifera leaf meal utilization in broiler chicken feed was exhibited together with the rabbit disease project. These were placed together with other University projects in the class for the Best stand in Development Research Institution. It is my hope that the college will continue shining in the Nairobi International Trade Fair with the aim of enhancing food security, nutrition and environmental sustainability.
STUDENTS SPORTS & RECREATIONAL PROGRAMME FOR THE YEAR 2011 / 2012
The College had the following Sports & recreational programme / activities spread throughout the year 2012 / 2013 in the following Sports, Soccer, Basketball, volleyball, Hockey, Rugby, Badminton, Handball, Netball, Table tennis, Karate, Taekwondo, chess, scramble, Darts and swimming.

UNIVERSITY OF NAIROBI COLLEGE OF AGRICULTURE AND VETERINARY SCIENCES ROVER SCOUTS

Message from the Crew Leader (Omondi Peter)
“Dear scouts, - if you have seen the play “Pater Pan” you will remember how the pirate chief was always making his dying speech because he was afraid that possibly when the time came for him to die he might not have time to get it off his chest. It is much the same with me, and so, although I am not at this moment dying, I shall be doing so one of these days and I want to send you a parting word of good-bye. Remember, it is the last one you will ever hear from me so think it over.I have had a most happy life and I want each one of you to be happy in life too. I believe that God put us in this jolly world to be happy and enjoy life; happiness does not come from being rich, nor merely from being successful in your career, nor by self-indulgence. One step towards happiness is to make yourself healthy and strong while you are a boy, so that you can be useful and so can enjoy life when you are a man. Nature study will show you how full of beautiful and wonderful things God has made the world for you to enjoy. Be contented with what you have got and make the best out of it. Look at the bright side of things instead of the gloomy one. But the real way to get happiness is by giving out happiness to other people. Try and leave this world a little better than you found it and when your turn comes to die, you can die happy in feeling that at any rate you have not wasted you time but have done your best. “Be Prepared” in this way, to live happy and to die happy- Stick to your Scout Promise always- even after you have ceased to be a boy and God help you to do it.”

WHO ARE WE…….? Scouting is a voluntary, educational, non-political movement for young people open to all—boys and girls without distinction of origin, race gender and creed ethical/tribal background in accordance with the purpose, principles and methods as conceived by the Founder Lord Baden Powel.
The movement aims at developing the students at their formative ages so that they become responsible citizens through social, physical, intellectual and spiritual development. It plays a complementary role to school and family by responding to different needs.

Fundamental Principles
1. Duty to God
2. Duty to Others
3. Duty to Self.

CAVS Rovers working on their tree nursery project.
CAVS ROVER SCOUTS at Nairobi children’s home giving donations  Rover scouts service team at State house with the Kenya Scouts patron during scout's patrons day.
On 27th July 2008 on a Sunday afternoon, Prof. Wangari Maathai, Prof Peter Gehr from University of Bern, Prof. Vertistine Mbaya and I met for lunch at Fare view hotel here in Nairobi. Prof. Gehr had requested to meet Prof Maathai on his return from Masai Mara where he and I had presented a joint paper at the international conference on Comparative Physiology and Biochemistry, Molecules to Migration, Maasai Mara, Kenya. Prof Maathai and Prof Gehr worked together in late 70’s when Peter was doing part of his post doc work at the Department of Veterinary Anatomy, University of Nairobi. Wangari was then the chair of the Department. They therefore had a lot to share going back to those years. At the end of the meeting, I requested Prof. Maathai to consider doing something with the Faculty of Veterinary Medicine where I was serving as the Associate dean of the University of Nairobi at large particularly in mentoring and motivating students. Prof Maathai responded in the affirmative and requested for another meeting where she could share some of the things that she had also been thinking about concerning engaging her alma mater, University of Nairobi. In the subsequent meeting it became clear that Wangari had a bigger vision – The Vision of the Institute. Since then, the University of Nairobi and the Green Belt movement walked with her to realize her dream. I have been privileged and humbled to be part of bringing the dream to reality.

In February 2010, the University of Nairobi appointed Prof Maathai, the Founder Distinguished Chair of the newly established Wangari Maathai Institute for Peace and Environmental Studies. Wangari was very instrumental in its establishment where she attended every meeting I convened for this purpose. She saw in it a real possibility of training transformational leaders and change agents that will bridge theory with practice in the fields of peace and environmental governance and its linkages with democracy. The Institute was very close to her heart and she has shared some of her thoughts on it in her last book “Replenishing the Earth: Spiritual values for Healing Ourselves and the World”. During the inaugural Board Meeting held on Tuesday March 09, 2010. Prof. Maathai at the beginning of the meeting requested for a moment to sing the song Amazing Grace”, a Christian hymn written by the English poet and clergyman John Newton and published in 1779 to reflect her journey and the formation of the Institute. The Board members joined her in singing the first three (3) stanzas of the song.

Since these humble beginnings, the Institute has established formal linkages with international partners, launched teaching programs and admitted students; and is soon putting up a green campus in line with the hopes and aspiration of the Founder, the late Prof Wangari Maathai. The establishment of Institute was based on recognition by University of Nairobi and the, the late Professor Wangari Maathai, the 2004 Nobel Laureate that there is need for a pioneer institute in Africa that trains and carries out research on environmental governance and its linkages with democracy and human rights. Thus, the core purpose of WMI is to spearhead holistic multi-disciplinary research, training and community empowerment and outreach services in environmental management and its linkages with peace and democracy. The Institute currently offers two degree program the Master of Science degree in Environmental Governance and Doctor of philosophy degree in environmental governance and management.

I am very grateful to the Government of Kenya, University of Nairobi Administration, the Green Belt Movement and all International partners for the roles they are playing and continue to play to ensure the dream of this great woman, the Late Prof Wangari Maathai is realised. The contribution made by staff from various departments both locally and internationally have ensured that the institute remains true to its promise of encompassing a multidisciplinary approach to research and training. The contributions of all the staff is appreciated. I wish to offer special thanks to Dr Thenya Thuita and Prof. Raphael Wahome who have continued to serve as the coordinators of the PhD and the MSc programs respectively.

1. Programmes offered;
   (i). Doctor of Philosophy in Environmental Governance and Management
   (ii). Master of Science in Environmental Governance

   (i). PROJECTS
   wPOWER: Promoting Women's Critical Role in Clean Energy Solutions to Climate Change
The Department of State launched the Partnership on Women’s Entrepreneurship in Renewables (“wPOWER”) in January 2013. wPOWER aims to empower more than 8,000 women clean energy entrepreneurs across East Africa, Nigeria and India who will deliver clean energy access to more than 3.5 million people over the next three years.

To reach this goal, the Department of State and USAID have teamed up with the MacArthur Foundation, the Global Alliance for Clean Cookstoves, CARE International, Solar Sister, Swayam Shikshan Prayog and the Wangari Maathai Institute for Peace & Environmental Studies.

Globally, more than 1.3 billion people lack access to electricity, and at least 2.7 billion people lack access to clean cookstoves and fuels. While not the primary source of climate pollution, inefficient lighting and cooking contribute to climate change and the degradation of natural resources. In off-grid communities, women are the primary users of clean technologies like solar lamps and clean cookstoves and are at the forefront of adopting the use of new technologies. wPOWER is working to unlock this largely untapped potential of women and women’s groups to help fill the “last mile” gap in the supply chain to reach areas lacking energy access.

New Strategic Partners:
Women for Women International (WfWI): WfWI provides women survivors of war, civil strife and other conflicts with the tools and resources to move from crisis and poverty to stability and self-sufficiency. WfWI will work with wPOWER partners to begin offering a clean energy entrepreneurship vocational track to the women who are part of its program in Nigeria.

Green Belt Movement-Kenya (GBM): Professor Wangari Maathai’s GBM pioneered a community-based tree-planting approach that put women at the forefront of environmental stewardship. By partnering with some of GBM’s 4,000 community groups, we will expand wPOWER networks of women clean energy entrepreneurs and introduce new livelihood opportunities to GBM’s grassroots women leaders.

The Department of State launched the Partnership on Women’s Entrepreneurship in Renewables (“wPOWER”) in January 2013. wPOWER aims to empower more than 8,000 women clean energy entrepreneurs across East Africa, Nigeria and India who will deliver clean energy access to more than 3.5 million people over the next three years. To reach this goal, the Department of State and USAID have teamed up with the MacArthur Foundation, the Global Alliance for Clean Cookstoves, CARE International, Solar Sister, Swayam Shikshan Prayog and the Wangari Maathai Institute for Peace & Environmental Studies.
(ii). **WMI Shares $1.5 Million Research Grant Support from Danish Fellowship**

Wangari Maathai Institute in collaboration with the University of Copenhagen, Denmark, Green Belt Movement and Kenya Forestry Research Institute secured a research grant of USD 1.5 Million from Danida Fellowship to carry out a project entitled “Stabilizing Kenya by Solving Forest Related Conflicts” (STAKE). The overall goal of the project is to contribute towards stability in Kenya with a specific study on the ongoing attempt to democratize the governance of the forest resources in the Mau Forest Complex. The program has provided scholarships to four (3) PhD students, one post doc and will also provide research funds to 15 Masters Students. In addition, the project is aimed at building capacity for WMI and is coordinated by Dr Thenya Thuita from University of Nairobi on behalf of WMI and Prof. Vibeke Vindelov on behalf of University of Copenhagen

(iii). **African Natural Products Research and Training Network (RISE-AFFNET)**

RISE- AFFNET was established by the University of Nairobi, Makerere University and Soikoine University of Agriculture. Currently the program has provided scholarships to six (6) PhD students, six (6) Master of Science Students in Natural products and two (2) post doctoral research fellows. In addition, the program has developed a Master of Science curriculum on Natural products and bio-prospecting. It is supported by Carnegie Foundation through Regional Initiative in Science and Education (RISE); http://rise-affnet.uonbi.ac.ke). Kabasa J. D., Kiama, S.G., Mdegere R.

(iv). **African Development Fund to finance WMI Learning Centre**

WMI received $9 Million through the African Development Bank for the learning centre, which is part of the larger development ($40 Million) of the WMI. This was made possible through the support of the Ministry of Higher Education Science and Technology through a project dubbed “Support to Enhancement of Quality and Relevance in Higher Education Science and Technology in Selected Universities in Kenya Project”. The funding will support the WMI through construction of the first phase of a teaching, learning and experiential centre to facilitate the transfer of knowledge and skills on using natural resources sustainably from the faculty to the grassroot. The institute will also provide a community education program that will support and strengthen the capacity of professionals to serve their communities thus bridging the knowledge practice gap.

2. **International linkages and Collaborations**

Without key partners WMI cannot fulfill its ambitious vision. In a networked society, partnerships are increasingly important to create a critical mass, synergies and stretch scarce resources. Thus, to achieve planned results and targets and to leverage resources, WMI has forged strategic alliances with the public, private and international partners in implementing its mandate. As part of the program development process, WMI has established formal partnerships with the University of Copenhagen, The Energy Research Institute (TERI) in India, the United Nations Environment Program (UNEP), Green Belt Movement (GBM-Kenya) and the The Green Belt Movement-International. These partnerships will continue to grow as part of WMI’s global outreach.

3. **Publications and Conference papers**

6. Karambu M., Kiama S.G., Wanjohi J.M., Mathiu P.M., Midiwo, J. Investigation of 4 Kenyan plants of the family Cyperaceae and specifically ethno-botanical uses of Cyperus articulatus. 16th ANNUAL Conference held at the
Agricultural Research College-Institute for Tropical and Subtropical Crops in Nelspruit Mpumalanga province in S.Africa, 1st-4th of July 2013.

7. Okindo, O.R., Kiama S.G., Mbaria J., Gakuya P. Efficacy, phytochemistry and evaluate the safety of a medicinal plant (vernonia hymenolepis) used in kenya for oral health. The Kenya Veterinary Association held the 47th annual scientific conference between 23rd and 28th April 2013 at Whitesands Hotel, Mombasa.


15. Kiama S.G. attended annual meeting of the Regional Initiative in Science and Education (RISE) organised in cooperation with the University of the Witwatersrand held at the Aloe Ridge Hotel and Game Reserve Johannesburg South Africa on 25-26 October 2013.


4. Outreach activities

(i). Wangari Maathai Institute partnered in Golden Climate, International Environmental Project Olympiad

![The Director Wangari Maathai Institute, Prof Kiama Gitahi receiving on behalf of WMI a plaque from Mr. Bilal Karaduman, Chairman of Light Academy Schools in recognition, appreciation and sponsoring the 3rd edition of Golden climate International Environmental Project Olympiad.](image)

Wangari Maathai Institute was invited by the Light Academy, Nairobi to participate in a program dubbed Golden climate whose purpose is to raise environmental awareness and consciousness to young people. The event was held on 2nd and 3rd May 2013 at Light Academy Karen Campus in Nairobi. The occasion was attended by 100 schools representing 20 countries. The theme of the gathering was “Raising Golden Generation to Achieve a Golden Climate”.

Several awards were given to the participants. The most prestigious award was the Wangari Maathai Special Award that was presented to Turgut Ozal College, Turkmenistan and Abadan 9th Secondary School, Albania by the Turkish Ambassador in Kenya, Mr H. Avni Aksoy.

Exchange Programme

![WMI students attend an experiential learning Course in Nicaragua](image)

WMI PhD students were privileged to attend an experiential learning course in Managua, Nicaragua (25th February to 5th March, 2013). The theme of the course was “Conservation, Development and Communication in Diverse Landscapes: Theories and Methods”. The course was hosted by Universidad Nacional Agraria (UNA) and facilitated by Professors from both UNA and the Swedish University of Agricultural Sciences.
Participants in the course included PhD students from across the globe with diverse backgrounds working on issues related to Environment and livelihoods.

The Cabinet secretary for Environment and Natural Resources visited Wangari Maathai Institute on 2nd July 2013 to launch the STAKE project. Commenting during the launch Prof Wakhungu said "Kenya is riddled with conflicts and instability, as evident in the widespread violence that occurred after the 2007 national elections. She noted that most of this violence took place in rural areas, where conflict and competing claims over natural resources appear closely entangled. The underlying drivers of conflict and violence remain contested and poorly understood. This project is expected to contribute to stability in Kenya by understanding and targeting the underlying factors that lead to conflicts over forest related resources. Prof Wakhungu indicated that she was happy that Wangari Maathai Institute has taken this issue for its first project.

This 3-year project funded by the Danish Development Agency (DANIDA) will also contribute to Kenya's long-term development by mentoring and training the next generation of talented, young academics through provision of scholarships for Masters and PhD training. It is a partnership between the Wangari Maathai Institute, the Green Belt Movement (GBM), Kenya Forest Research Institute (KEFRI) and the University of Copenhagen, Denmark. Prof. Wakhungu noted that in search for stability and prosperity, the government of Kenya in 2005 enacted a Forest Act aimed at improving natural resources management by decentralizing responsibilities and rights of forest management to civil society bodies called Community Forestry Associations (CFA).

After the launch Prof Wakhungu led the participants in planting indigenous tree to commemorate the life of the late Prof. Wangari Maathai at the WMI site. The trees planted include: Prunus africana, Warburgia ugandensis, Olea europaea ssp. Cuspidate, Podocarpus falcatus, Vepris simplicifolia, Croton megalocarpus, Juniperus procera, Markhamia Lutea, Syzygium guineense, Olea welwitschii, Trichilia emetic, Brachylaena huillensis, Spathodea campanulata and Vitex keniensis. Prof. Wakhungu planted a red stinkwood (Prunus africana) and a Nandi flame (Spathodea campanulata). The tree planting exercise was coordinated by Dr Thenya Thuita, Mr Gachathi and Prof. Karanja Njoroge. When delivering her speech, Prof Wakhungu indicated that she was glad that the development of the physical infrastructure of the Institute is well on course. She noted that the first phase has received funding from the African Development Fund in collaboration with the Government of Kenya's under the "Support to Enhancement of Quality and Relevance in Higher Education, Science and Technology Project". "The government is committed to ensure that this work commences soon and I will personally follow this up" Said Prof Wakhungu.

Other people who attended and spoke during the launch included: Prof. Agnes Mwangombe Principal College of
Agriculture & Veterinary Sciences, University of Nairobi, Prof. S. G. Kiama, Ag. Director Wangari Maathai Institute, Prof. Vibeke Vindelov, University of Copenhagen, Dr B N. Chikamai, Director, Kenya Forest Research Institute, Dr Njeri Gakonyo Chair of the Board, Green Belt Movement, Mahesh Pradhan Head of UNEP's Environmental Education and Training Unit and the daughter of the late Prof Wangari Maathai, Ms Wanjira Maathai.

First STAKE steering Committee meeting Held.

The 1st Steering committee meeting for the STAKE project was held on 8th October 2013 under the chairmanship of the Principal of Agriculture and Veterinary Sciences, Prof Agnes Mwang’ombe. The STAKE project Steering Committee is mandated with the Strategic project management as well as external advocacy for the project (in policy and practice) and is comprised of the following members: Distinguished Chair, Wangari Maathai Institute, Principal of the College of Agriculture and Veterinary Sciences, Prof. A. Mwang’ombe; Director of KeFRI, Dr. B. Chikamai; Vice Dean - Faculty of Law, UC, Prof. J. Vestergaard; Project Coordinator UoN, Dr. T. Thenya; Principal Project Coordinator UC, Prof. V. Vindeløv and; Director of WMI, Prof. S.G. Kiama who serves as ex officio member (secretary) to the PSC. Dr. B. Chikamai noted that that STAKE team has done a commendable job in overseeing the success of the project and urged all to keep up with the same spirit.

The day-to-day practical project management is carried out by the Project Management Committee (PMC) which is comprised of the project coordinator Dr. Thuita Thenya, supported by STRAPA coordinator Prof. R. G. Wahome, a representative from KeFRI, Mr. Joram Kagombe and the Executive Director of the Green Belt Movement. The PMC co-ordinates closely with the University of Copenhagen partners and, in particular, the Principal Coordinator, Prof Vibeke Vindelov.

Senate Approves a New Program for Wangari Maathai Institute

In July 2013, the Senate approved a new MSc syllabus to be taught at Wangari Maathai Institute entitled “Master of Science in Environmental Governance”. This program was developed by Wangari Maathai Institute in a process that involved various stakeholders. It was developed in realization that the world is characterized by skewed trade in natural resources, deforestation, geo-political struggles over oil and gas supplies, desertification and increasing environmentally related diseases among other issues. This raises important questions about how humans currently - and in future should organize the governance of natural resources and environments upon which they depend. In September 2013, the Institute admitted the first cohort of students who have now completed their first semester.

Grace Kemunto Ogechi, Msc Student in Environmental Governance Program

I am very fortunate to be member of WMI. The institute offers interesting and informative lectures. The sessions are very engaging, lecturers and students exchange and share information. We also have seminars where we are able to network with other people who have the common goal of sustainable development.

Masters program on environmental governance at The Wangari Maathai institute is comparable to no other as it enhances and equips leadership skills in environmental conservation to an individual! Am a better person as a result of the course as it challenges me to be more alive to the biotic and abiotic environment. It is timely especially now when our world is facing so many environmental challenges!

Rosemary Gichure, Msc Student in Environmental Governance Program

Guest Lecturers share their experiential knowledge with WMI students
Several guest lectures visited the Institute within the year and gave lectures to PhD and MSc class. Among these was Prof. Karanja Njoroge, Chairman of the Friends of Karura, who visited the Institute and gave a lecture entitled “Participatory Forest Management: The Role of Community Forest Associations”. He shared with the students how Karura forest was saved by the heroic struggle of Prof. Wangari Maathai and the successful partnership between Kenya Forest Service and the Friends of Karura under the premises of the Forest Act 2005 that gives communities the right to participate in forest management. WMI students were also privileged to receive a lecture from Mr. Jamleck Ndambiri, Chairman of the Kenya Forest Association, who presented on the topic “Forest Society of Kenya: Enter a New Paradigm”. Further, the Masters class had a very productive interactive session dubbed “Chai with Peter Blaze” on World Charter, Environmental Education and Ethics and their application in Environmental Governance by Prof. Peter Blaze Corcoran. From all three guests’ lectures, the students learnt the challenges and opportunities on environmental governance from the practitioners.

EXTERNAL EXAMINERS 2012/2013

<table>
<thead>
<tr>
<th>NAME</th>
<th>ORIGIN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Dr. Fuchaka Waswa</td>
<td>Kenyatta University</td>
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</tbody>
</table>

Faculty of Veterinary Medicine

The Faculty of Veterinary Medicine is one of the oldest Faculties in the University of Nairobi having started training in diplomas in the 1940s. It later became a fully fledged Faculty offering degrees in 1962 and celebrated its 50 years (Golden Jubilee) since inception in April 2012. It has produced a large part of the alumni of over two thousand both undergraduate and postgraduate. Currently, it has a teaching staff of 115, technical, secretarial and support staff of 140. The Faculty currently offers five (5) degree programs namely; Bachelor of Veterinary Medicine, B.Sc. in Biomedical Technology and B.Sc. in Wildlife Management & related options, B.Sc. in Leather Science & Technology and B.Sc. in Fisheries & Aquaculture Management. In addition, it offers over 20 M.Sc. and PhD programs, 1 postgraduate certificate, 3 diplomas, and 4 certificate programs.

Having undertaken to participate in achieving the vision 2030, the Faculty has joined the other stakeholders in developing the leather technology programs at diploma, B.Sc, M.Sc. and PhD levels. The above courses have been launched.

The Faculty continues to participate in outreach and community services and has regular Biennial conferences that attract local, regional and international participants. The 8th Biennial conference was held in April 2012 – plans are underway for the next (9th) Biennial conference in 2014.

ACADEMIC PROGRAMS IN THE FACULTY OF VETERINARY MEDICINE

<table>
<thead>
<tr>
<th>Undergraduate Degree Programs</th>
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<tbody>
<tr>
<td>The Faculty conducts five undergraduate degree programs.</td>
</tr>
<tr>
<td>Bachelor of Veterinary Medicine</td>
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<tr>
<td>Bachelor of Science in Wildlife Management and Related options</td>
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<tr>
<td>Bachelor of Science in Fisheries and Aquaculture Management</td>
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<tr>
<td>Bachelor of Science in Leather Science &amp; Technology</td>
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<tr>
<td>Bachelor of Science in Biomedical Technology</td>
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CURRICULA REVIEWED WITHIN THE YEAR
Bachelor of Veterinary Medicine
Diploma in Animal Health and Production

CURRICULUM DEVELOPED WITHIN THE YEAR
Bachelor of Science in Biomedical Laboratory Technology

NUMBER OF STUDENTS ADMITTED TO THE FACULTY INTO EACH UNDERGRADUATE PROGRAM IN 2012/2013

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<tr>
<th>FACULTY OF VETERINARY MEDICINE</th>
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<tr>
<td>1. Bachelor of Veterinary Medicine</td>
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<tr>
<td>2. B.Sc. in Biomedical Technology</td>
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<tr>
<td>3. B.Sc. in Wildlife Management</td>
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</tr>
<tr>
<td>4. B.Sc. in Fisheries</td>
<td>15</td>
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<tr>
<td>5. B.Sc. in Leather</td>
<td>21</td>
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<tr>
<td>6. Diploma in Animal Health &amp; Prod.</td>
<td>19</td>
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<tr>
<td>7. Diploma in Leather Technology</td>
<td>13</td>
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<tr>
<td>8. Diploma in Meat technology</td>
<td>36</td>
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<tr>
<td>9. Certificate in Artificial Insemination</td>
<td>0</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>242</strong></td>
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NUMBER OF STUDENTS WHO GRADUATED FROM EACH PROGRAM IN 2012/2013

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<tr>
<th>FACULTY OF VETERINARY MEDICINE</th>
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<td>3. Bachelor of Veterinary Medicine</td>
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<tr>
<td>4. B.Sc. in Biomedical Technology</td>
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<tr>
<td>5. B.Sc. in Wildlife Management</td>
<td>16</td>
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<tr>
<td>6. Dip. in Animal Health and Prod.</td>
<td>11</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>118</strong></td>
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EXTERNAL EXAMINERS 2012/2013

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<tr>
<th>NAME</th>
<th>DEPARTMENT</th>
<th>INSTITUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prof. Alexander Kahi</td>
<td>AP</td>
<td>Egerton University</td>
</tr>
<tr>
<td>2. Dr. Abdi Guliye</td>
<td>AP</td>
<td>Egerton University</td>
</tr>
<tr>
<td>3. Prof. Esther Magiri</td>
<td>Biochemistry</td>
<td>JKUAT</td>
</tr>
<tr>
<td>4. Dr. Gideon Kikuvi</td>
<td>VPMP</td>
<td>JKUAT</td>
</tr>
<tr>
<td>5. Dr. Dennis Byarugaba</td>
<td>VPMP</td>
<td>Makerere University</td>
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<td>6. Dr. Moses K. Ndiema</td>
<td>DVAP</td>
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<td>7. Dr. Jane Mburu</td>
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<td>8. Sophie Mukwana</td>
<td>CSD</td>
<td>Biotech Forensic</td>
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<td>9. Dr. Francis Gakuya</td>
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<td>10. Godwin Njeru</td>
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<td>11. Joseph Gikunju</td>
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<td>12. Dr. Henry Kiara</td>
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<td>13. Dr. Michael Gicheru</td>
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<td>14. Dr. Henry Kiara</td>
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<td>15. Joseph Gikunju</td>
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<td>JKUAT</td>
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<td>16. Prof. Resto Mosha</td>
<td>PHPT</td>
<td>Sokoine</td>
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<td>17. Dr. Michael Gicheru</td>
<td>PHPT</td>
<td>Kenyatta University</td>
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<tr>
<td>18. Dr. Mwinyikione Mwinyihija</td>
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<td>19. Dr. Joseph Rotich</td>
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<tr>
<td>20. Prof. Jayro Matoveleo</td>
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<td>Sokoine</td>
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<tr>
<td>21. Dr. Dennis Byarugaba</td>
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<tr>
<td>22. Prof. Thokozani Hove</td>
<td>VPMP</td>
<td>Zimbabwe</td>
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<tr>
<td>23. Prof. Bittigeko Rwagemamu</td>
<td>CSD</td>
<td>Sokoine University</td>
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DEPARTMENT OF VETERINARY ANATOMY AND PHYSIOLOGY

The Department of Veterinary Anatomy and Physiology is a Department of The Faculty of Veterinary Medicine (FVM), College of Agriculture and Veterinary Science (CAVS) located at Chiromo Campus. The Department teaches preclinical Veterinary Students Animal Physiology and Veterinary Anatomy. It also offers courses to BSc wildlife BSc Fisheries and BSc Leather students form a selection of the following courses: Vertebrate Anatomy, Ecophysiology, Ornithology, Icthyology, Herpetology and Wildlife Behaviour. The Department also offers undergraduate service courses to the Faculty of Agriculture and College of Health Sciences (BSc. Biochemistry). Postgraduate service courses are also offered to the Department of Animal Production and the School of Biological Sciences (MSc. Biology of Conservation).

Dr. Charles N. Kimwele
Chairman Department of
Vet Anatomy & Physiology

PROGRAMMES OFFERED

Postgraduate Programmes - 5
1) PhD (Animal Physiology)
2) PhD (Veterinary Anatomy)
3) Master of Science in Comparative Animal Physiology
4) Master of Science in Reproductive Biology
5) Master of Science in Veterinary Anatomy and Cell Biology

ENROLLED STUDENTS IN POSTGRADUATE PROGRAMMES
PhD. - 6
Masters - 3

NO. OF STAFF AND THEIR DESIGNATION
Professor - 2
Assoc. Professor - 4
Senior Lecturer - 8
Lecturer - 5
Tutorial Fellow - 6
Chief Technologist - 2
Senior Technologist - 6
Technologist - 6
Technician Trainee - 1
Carpenter - 1
Maceration - 1
Cleaner - 1
Messenger - 1
TOTAL 44

NUMBER OF GRADUANDS
Masters - 2
PhD - 2

SUMMARY REPORT OF ACTIVITIES & EVENTS
TRAININGS
1st to 4th April 2013. As part of the mentoring for other Universities, The Department offered a Service Delivery Practical Training for BSc. Animal Health (JKUAT) students.

Between August and November 2013, Dr. Boniface Kavoi from Dept. of Vet. Anatomy & Physiology was a visiting scholar at the University of Ghana, School of Veterinary Medicine and Consumer Sciences. While on the academic visit, he taught Veterinary Gross Anatomy to 200 BVM students at the School. He further engaged in research by supervising post graduate students. He also engaged in Vet. Gross Anatomy curriculum development.

EXCHANGE PROGRAMMES
From May 28th to 21st June 2013: Prof. Seth M. Kisia visited the University of Minnesota, USA. for the “2013 Public Health Institute (Training)” at the School of Public Health from May 28th to 21st June 2013. The visit was a RESPOND Faculty exchange programme sponsored by USAID involving Scientists from Central and East Africa (Kenya, Uganda, Tanzania, Ethiopia, Rwanda and Democratic Republic of Congo) and S. E. Asia (Thailand, Malaysia, Indonesia and Vietnam) under the ‘ONE HEALTH’ concept.

COLLABORATIONS
Wildlife Molecular forensic Research Collaboration
A collaborative research effort between the UoN (Department of Veterinary Anatomy and Physiology (Lead Departmental researcher, Dr. C.N. Kimwele)), JKUAT (Prof. Erastus Gatebe, Dr. Shandrack Muya, Professor Anne Muigai, Dr. Mercy Mwaniki) and Kenya Wildlife Services (Dr. F. Gakuya). In 2012 through to 2013 one Ph.D and three MSc. students carried out laboratory analysis at the Biotechnology laboratory of the Department. The three students were Julius Kinuthia (JKUAT), David Mbugu (UoN), Ednah Kwamboka (JKUAT) and Morris Mugambi (JKUAT).

Lake Magadi Collaborative Research
Between July and August 2013 the Magadi Collaborative Research, including members of the Department and Scientists from McMaster University Canada, Federal University Rio Grande, Brazil. University of Antwerp, Belgium South Eastern University, Kenya Wildlife Services and University of Nairobi visit For 2 Months. The Lake Magadi Collaborative Research Team comprises of Dr. Rodi Ojoo (UoN), Prof. Chris Wood, Dr. Ora Johannsson (McMaster University), Prof. Gudrun DeBoeck (University of Antwerp Belgium), Dr. Mosiany Kisipan (UoN), Dr. Kevin Brix (Federal University of Rio Grande Brazil), Dishon Muthee (UoN), Dr. Michael Papa (UoN) & Prof. John Maina (University of Johannesbug, SA). The Team visited Lake Magadi to study the lake Magadi fish.

African Natural Products Research and Training Network (RISE-AFFNET)
Natural products (NP) value chain and technology is a multi- and interdisciplinary sciences that addresses the problems and issues associated with it. NPs have an immense potential to poverty eradication and sustainable livelihoods. However, the existing systems for their development as a resource and livelihood option are weak and fragmented. There are many NP related pressures facing the region, including knowledge gaps, biodiversity loss, insufficient human capacity, overexploitation, and the very real possibility of resource loss associated with climate change and population pressure. The development of African solutions to the problem of its natural industry is hindered by shortage of trained personnel, competent human capital and facilities, especially at high levels of academic and professional expertise, resulting into insufficient grass-root trickledown effect. RISE- AFFNET was established by the Makerere University (Prof. Kabasa J. D.), University of Nairobi (Prof. S. G. Kiama), and Sukoiine University of Agriculture (Prof. Mdegere R.) in 2008 to bridge this gap. Currently the program has provided scholarships to five several PhD student and Masters of Science Students in Natural products and two (2) post doctoral research fellows. The project is supported by Carnegie Corporation of New York through-Regional Initiative in Science.
Students provided scholarships by the rise program after a meeting with Andrea Johnson from Carnegie Coorporation.

Above Left tonight Ms. Sylvia Onchaga, Dr. Irene Kamanja, Dr. Stanley Wambugu, Ms. Clare Njoki, Ms. Karambu Muriithi, Ms. Andrea Johnson, Prof. Stephen Kiama, Dr. Zachary Rukenya, Dr. Joseph Nguta, Mr. Joseph Musau Squatting – Dr. Ronald Onzigo, Dr. Catherine Kaluwa, Dr. Johnson Nasimolo, Dr. James Kuria & Dr. Dominic Ochwang’i.

GRADUATION

Four of our teaching staffs were awarded various degrees:

1. Prof. Professor Geoffrey M. Ole Maloiy was awarded a Doctor of Science degree
2. Dr. Albert Nyongesa graduated with a PhD in comparative physiology
3. Dr. Kimani Muturi graduated with an MSc in Vertebrate Anatomy
4. Dr. Nasimolo also graduated with an MSc in Vertebrate Anatomy

PUBLICATIONS AND CONFERENCE PAPERS


11. Nyongesa presented a talk in Khat Symposium titled: "Nerval and homonal interplay on behavior in vervet monkeys (Chlorocebus aethiops)" on 13th to 18th June 2013 in Morocco, during the 11th International SONA conference


17. Papah presented a research on “Lake Magadi ecosystem: current research trends and future perspectives” during the 1st OHCEA One Health Conference, in Hilton Hotel, Addis Ababa, Ethiopia from 22 - 26 September 2013.


Community Outreach Activities
CAVS - KIPPRA tree planting, 23rd June 2013.

STAFF WELFARE

Above: DVAP Welfare Annual general meeting was held on 28th November 2013.

RESEARCH ACTIVITIES UNDERTAKEN IN 2013
Research areas undertaken
- Physiological and Ecological studies of the unique aquatic life in Lake Magadi, Kenya.
- Conservation genetics and forensics in Kenya
- Evaluation of traditional herbal therapy for cancer state
- Mechanism of action of purified cathinone from khat (Catha edulis) on behavioural and reproductive function in vervet monkeys (Chlorocebus aethiops)"
- Investigations on Notch signaling in developmental angiogenesis.
- Mechanisms of blood-gas barrier development in an avian model.
- Spermatogenesis in Lake Magadi tilapia (Alcolapia grahami): A fish living on the edge
- Evaluation of pain alleviating, anti-inflammatory and anti-Rheumatoid properties of selected Kenya Medicinal plants.
- Pharmacological, Toxicological and Phytochemical study of Clerodendrum myricoides, an important medicinal plant used in Samburu, Kenya.
- Development of a biopesticide for use against mosquitoes from selected plants in Msambweni District, Kenya.
Indigenous knowledge and practices of the Ameru in natural resources conservation

Animal welfare Research and Policy in Africa

**Grants**

- Preparation of a grant proposal for ERAfrica

**INTERNATIONAL LINKS AND COLLABORATIONS**

1. McMaster University, Canada
2. University of Johannesburg, South Africa
3. Great Lakes Laboratory for Fisheries and Aquatic Sciences, Canada
4. University of Antwerp, Belgium
5. Universidade Federal do Rio Grande (FURG), Brazil
6. University of Wyoming, U.S.A
7. JKUAT
8. Kenya Wildlife Services (KWS)
9. University of Minnesota through its Duluth Campus Medical School
10. Institute of Anatomy, University of Bern. This link supports joint research projects and capacity building for the Department of Veterinary Anatomy and Physiology and the Institute of Anatomy, University of Bern.
11. With Dr. Ivanka Dimova, Department of Medical Genetics, Medical University Sofia, Bulgaria
12. Tufts University and University of Minnesota on One Health.
13. World Society for the Protection of Animals

**DEPARTMENT OF PUBLIC HEALTH, PHARMACOOGY AND TOXICOOLOGY**

The Department of Public Health, Pharmacology and Toxicology (PHPT) is one of the five academic units in the Faculty of Veterinary Medicine, University of Nairobi. The department provides training and research in the following specialized areas: Veterinary Public Health (Food Microbiology, Food Hygiene, Food and Environmental Toxicology, Zoonoses, Meat hygiene), Pharmacology, Toxicology, Epidemiology, Livestock Economics and Business management, Biostatistics, Immunology and Microbial Biotechnology and leather Science and technology. Consultancy services are provided in the following areas: Acute toxicity testing of pesticides, Drug efficacy trials, toxicological analysis of feed samples, microbiological analysis of food, water and feeds, mycotoxin analysis, slaughterhouse design and construction, field surveys among others.

Prof. Jackson N. Ombui,
Chairman, Department of Public Health,
Pharmacology and Toxicology

**ACADEMIC PROGRAMS OFFERED IN THE DEPARTMENT**

**UNDERGRADUATE PROGRAMS:**

**Diploma programs**
1. Diploma Leather technology

**Certificate programs**
1. Certificate course in Meat Hygiene and Quality Assurance

**POSTGRADUATE PROGRAMS:** The Department offers the following five Masters and five PhD programs.

**Masters Programs**
1. Master of Science in Pharmacology and Toxicology
2. Masters in Epidemiology and Economics
3. Masters in Veterinary Public Health
4. Master of Science in Natural products and Bioprospecting
5. Master of Science in Leather Science

**PhD Programs**
1. PhD in Pharmacology and Toxicology
2. PhD in Epidemiology and Economics
3. PhD in Veterinary Public Health
POSTGRADUATE STUDENTS WHO GRADUATED IN September 2012

1. Dr. waweru kabaka (J567560009); Master of Veterinary Epidemiology and Economics
2. Jason K. Gathumbi (J567138007); Master of Science in Pharmacology and Toxicology
3. Joseph Kipkoech Bundotich (J567670409; Master of Science in Pharmacology and Toxicology
4. Okumu Ochola (J567204408; Master of Science in Pharmacology and Toxicology
5. Cameline Wanjiru Mwaai (J567240505; Master of Veterinary Public Health)
6. Emali Eric Eshitera (J567137907; Master of Veterinary Epidemiology and Economics)
7. Joan Magero Akumu (J567907003; Master of Veterinary Epidemiology and Economics)

Research Projects
Prof. James M. Mbaria: Building Research partnerships and capacity in the field of ecotoxicology in Kenya and South Africa (Grant Amount: NCST(K) Ksh: 1.5 Million and NCST(SA) Ksh. 1.5 million)

Collaborators: Dr. Edward Kariuki (KWS), Francis Gakuya (KWS); Dr. Gerald Muchemi (Phpt)


Publications and Conference Papers
7. Ombui J.N attended a Joint UON/ISTVS/IGAD Workshop to discuss Diploma and BSc programs to be offered at ISTVS and modalities for Implementation at Naivasha Country Hotel, Naivasha between 8th-10th May 2013.
8. Ombui J.N attended a Joint UON/ISTVS/IGAD Workshop to finalize discussions on Diploma and BSc programs to be offered at ISTVS and modalities for Implementation at CHAK Guest House, NAiRobi between 13th-15th May 2013.
9. Ombui J.N attended College Strategic Planning Workshop at The School of Monetary Studies, Nairobi, between 16-18th May, 2013.
10. Ombui J.N attended an ODEL – Orientation workshop held on 17th July2013 at CAVS (Dept Clinical Studies Seminar Room)
12. Ombui J.N attended an OHCEA supported workshop to review of Bachelor of Veterinary Medicine held at Jacaranda Hotel, in Westlands, Nairobi on 4th September 2013
13. Ombui J.N attended an OHCEA supported stakeholder forum on review of Bachelor of Veterinary Medicine held at Maaazoni Hotel between 16- 20th September, 2013
14. Ogara W.O attended the 2nd Internatinal congress on Pathogens at Human-Animal Interface (ICOPHAI): One health for sustainable development, Brazil 14-17th August, 2013
16. Kanja L.W attended an ODEL – Orientation workshop held on 17th July2013 at CAVS (Dept Clinical Studies Seminar Room)
17. Kanja L.W attended a training workshop on use of E-learning portal for CAVS staff held on 14th-15th August, 2013 at School of Computing, underground labs, Chiromo Campus.

18. Nguta J.M attended a workshop to review Veterinary Medicine curriculum at Maanzoni Lodge, Machakos, during 16th to 20th September 2013.

19. Nguta J.M attended a stakeholder’s workshop to review Veterinary Medicine curriculum at Jacaranda hotel in Westlands, on 4th September 2013.

20. Nguta J.M attended an International Course/International Workshop on, “Molecular Epidemiology and Applications in Foodborne, Nosocomial and Vector-borne Infectious Diseases of Global Significance” at Summerville Beach Resort, Porto de Galinhias-Pernambuco (PE), Brazil during August 11to 14th, 2013.

21. Nguta J.M attended the University of Nairobi Science Knowledge base (UONSK) E-learning workshop on TUSK software organized by One Health Central and Eastern Africa (OHCEA) during 6th to 9th August, 2013, at the Computer lab, 8-4-4 building, Upper Kabete Campus, University of Nairobi.

22. Nguta J.M attended an International Course/International Workshop on, “Molecular Epidemiology and Applications in Foodborne, Nosocomial and Vector-borne Infectious Diseases of Global Significance” at Summerville Beach Resort, Porto de Galinhias-Pernambuco (PE), Brazil during August 11to 14th, 2013.

23. J.M Nguta J.M attended the University of Nairobi Science Knowledge base (UONSK) E-learning workshop on TUSK software organized by One Health Central and Eastern Africa (OHCEA) during 6th to 9th August, 2013, at the Computer lab, 8-4-4 building, Upper Kabete Campus, University of Nairobi.

24. LW. Kanja attended the 13th International symposium on natural products chemistry 22-25 Sept. 2012 Karachi, Pakistan

25. JM Mbaria attended a Technical Working Group 3rd meeting., Kampala, Uganda, 23rd September – 24th September, 2013

26. JM Mbaria attended the 4th International Toxicology Symposium in Africa 2-4th September, 2012

27. EK. Kangethe attended an FAO/WHO expert meeting 3-7 Sept. 2012, Rome

28. PM. Kitula attended a workshop to plan targeted expansion of innovative training programs 17-20th Sept. 2012, Tanzania

Other Activities
Prof TE. Maitho. Served as External examiner for Sokoine University of Agriculture between 19/7/-29/7/2013.

DEPARTMENT OF ANIMAL PRODUCTION

Introduction

The Department of Animal Production is one of the oldest departments of the University of Nairobi. Located at Upper Kabete Campus, Faculty of Veterinary Medicine, the department is also a full member of the Faculty of Agriculture. Since its inception, the department has participated in the production of several veterinarians, agriculture graduates, food technologists, range managers, agricultural engineers in addition to several Masters of Science in Animal Nutrition, Animal Genetics and Breeding and Management of Livestock production systems as well as many Ph.D.s in specific aspects of Animal science Academic Programmes. The department offers courses in animal production to undergraduates of the faculties of Agriculture and Veterinary Medicine. The year 2012/2013 has seen the department undertake several activities and the success has been very good. Here are some of these activities

Dr Jung’a, Chairman of the Department

Rabbitry Unit

The department has been able to set up a research and teaching rabbitry facility within the college. This unit is used to serve both the undergraduate and postgraduate students within the faculties of Agriculture and Veterinary sciences.
So far we have the New Zealand white and California White breeds. This rabbit have been presented at the ACK Nairobi International Trade Fare 2013 where the Department won the following awards

i. Champion Prize for an Adult New Zealand White Doe

ii. 1st Prize for an Adult New Zealand White Buck

iii. 1st Prize for a New Zealand White Doe and Litter

iv. 2nd Prize for an Adult New Zealand White Buck

**Hatchery**

Through the assistance of the Principal the Department has also been able to set up a hatchery facility for teaching and research especially for the indigenous chicken. This facility can be able to hutch 9000 eggs. This facility has had very good hutching rates since it was started. The day old chicks are then taken to Kibwezi for rearing.
Poultry Unit
The department has had very good production from its Poultry unit which sells both high quality eggs and prime broilers. This success has lead to increased demand for these products and as such the poultry unit is now being changed from the traditional deep litter system into the cage system of rearing chicken which requires less space and is more efficient for individual bird production monitoring. The department has also expanded its poultry unit to Kibwezi farm where it rears indigenous chicken.

Fisheries Degree Programme
The department has also started a new degree programme called BSc. Fisheries and Aquaculture Management with the first cohort of students being admitted to this degree during this academic year. With the help of the Principal the department has also been able to start fish ponds at the field station that will not only be used to teach students but also for income generation through sale of mature fish.

Other achievements and activities
The department has an income generating nutrition laboratory that is also used to offer practical lessons to both undergraduate and postgraduate students
The departmental staff are also involved in several research activities both within and outside the college. This year the department was able to admit students into various courses as shown below.
There are however 6 PhD. Students still enrolled in the department and 23 Msc. Students taking various specialities within the Department.

DEPARTMENT OF VETERINARY

DEPARTMENT OF VETERINARY PATHOLOGY, MICROBIOLOGY AND PARASITOLOGY
Department of Veterinary Pathology, Microbiology and Parasitology was among the first departments that started with set-up of Faculty of Veterinary Sciences of the University of East Africa, Makerere in 1962, which later evolved to Faculty of Veterinary Medicine in 1970, when University of Nairobi was established by an act of parliament.

The department is located on upper Kabete campus on Loresho Ridge Road, off Kapenguria Road, approximately 2 kilometers from the main Nairobi-Kikuyu-Limuru Highway. It is approximately 15 kilometers North-West of Nairobi City center. It comprises of the following sections: Pathology (gross-pathology, histopathology and clinical pathology), Microbiology (bacteriology, mycology, virology and immunology) and Parasitology (helminthology, entomology and protozoology); and carries out the following other services: diagnostic pathology, diagnostic microbiology, diagnostic parasitology, poultry clinic, and mycotoxin analysis.

The department is involved in:

(1) The teaching of both undergraduate (Bachelor of Veterinary Medicine, BSc. in Biomedical Technology and BSc. in Wildlife Management and Conservation) and postgraduate (MSc and PhD) students in the following disciplines: Pathology, Clinical pathology, Microbiology, Immunology, Parasitology and Diagnostic pathology, and Fish Science.
(2) Servicing other departments through teaching some of their courses. These include departments within the Faculty of Veterinary Medicine (Animal Production, Public Health, and Clinical Studies), Faculty of Human Medicine (Biochemistry) and Faculty of Agriculture (Department of Agricultural Economics and Department of Land Resource Management of Agricultural Technology (LARMAT).
(3) Carrying out problem-oriented research, which is geared towards improving animal health and production (domestic and wild, including poultry, fish and rabbits), human health, poverty alleviation and ensuring environmental sustainability; respective findings being disseminated to the general public via publications, workshops, seminars, conferences, farm visits and field days
(4) Offering demand-driven diagnostic services in diseases of both domestic and wild animals, including poultry, fish and rabbits; and zoonotic diseases. These diagnostic services also form part of the training component for both undergraduate and postgraduate students

NUMBER OF STAFF

<table>
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<tr>
<td>Professor</td>
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<td>Junior Technologists</td>
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<td>Driver</td>
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<td>Cleaner</td>
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FACILITIES
The Department has laboratory infrastructure for teaching and diagnostic services in pathology, Microbiology and Parasitology. We host a rich collection of disease specimen in the pathology museum for demonstration to students, We
also host large laboratories for practical sessions in all our disciplines. We have an Electron Microscope, an autopsy hall for large and small animals and animal experiment facilities and lecture theatres for large and small classes.

Prof P.K. Gathumbi Conducting a demonstration session to students in the Pathology Museum at the Department of veterinary pathology, Microbiology and Parasitology

Postgraduate students in a demonstration on Electron Microscopy at the Department of Veterinary pathology, Microbiology and Parasitology

A practical class in session with individualized microscopy per student in the Department of Veterinary pathology Microbiology and Parasitology

COURSES OFFERED IN UNDERGRADUATE PROGRAMS.
The Department teaches courses on pathology, microbiology and parasitology in the following programs that are offered by the faculty of veterinary medicine: Bachelor of Veterinary Medicine, BSc. in Biomedical technology and BSc. in Wildlife management and Conservation. The department also services course in degree programs offered by Faculty of agriculture and faculty of medicine.
POSTGRADUATE STUDENTS WHO GRADUATED WITHIN THE PERIOD
(2012- August and Dec)

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<th>MS c. PROGRAM</th>
<th>YEAR GRADUATED</th>
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<tr>
<td>1</td>
<td>Dr. Kamundia Patrick Waweru</td>
<td>MSc. in Fish Science</td>
<td>Sept. 2012</td>
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<tr>
<td>2</td>
<td>Dr. Mutua Victoria Ngo'ndu</td>
<td>MSc. in Applied Microbiology</td>
<td>Dec 2012</td>
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EXTERNAL EXAMINERS IN 2012/2013

1. Dr. Gideon Mutie Kikuvi - Jomo Kenyatta University - Kenya (Microbiology - semester I)
2. Dr. Joseph M. Njinyi - Kenya Agricultural Research Institute (Parasitology - Semester I)
3. Prof. Thokozani Hove - University of Zimbabwe (Parasitology - semester II)
4. Dr. Denis K. Byarugaba - Makerere University - Uganda (Microbiology - Semester II)
5. Prof. Jayro Amos Matovelo - Sokoine University of Agriculture Tanzania. (Pathology - Semester II)

PUBLICATIONS


**CONFERENCES AND SEMINARS**

1. The Department of Veterinary Pathology, Microbiology and Parasitology hosted a seminar on (i) “Determining the prevalence of subclinical mastitis and antibiotic sensitivity of the isolates in dairy goats in Mount Kenya region” By Mbindyo C.M. (ii) “Histopathological study of cutaneous tumours of horses at the Department of Veterinary Pathology, Microbiology and Parasitology, University of Nairobi.” By Shah Dhaval N. (iii)”Clinico-pathological, parasitological and microbiological studies of domestic rabbit diseases in target areas in Kenya.” By Okumu Paul O.IN THE LECTURE THEATRE on 20TH November, 2012.

2. The Department of Veterinary Pathology, Microbiology and Parasitology hosted a Workshop and training on forensic science and welfare of birds of prey and the interface with poultry and other industries, held in the Department of Veterinary Pathology, Microbiology and Parasitology, University of Nairobi, Kenya on 3rd July 2013.

3. In December 2013, a stakeholder’s workshop on enhancing village chicken productivity through parasite management for effective Newcastle disease vaccination in Mbeere district, Embu County.

4. The Department of Veterinary Pathology, Microbiology and Parasitology hosted a seminar on “Characterization and evaluation of subunit vaccines against contagious bovine pleuropneumonia” for Dr. Nkando, I.G.

5. P.K. Gathumbi and I.R. Mulei held a meeting with stakeholders at Marsabit to discuss proposal development on diseases that limit market access of livestock on April 20th, 2013.

6. P.K. Gathumbi, attended The Kenya Veterinary Annual Scientific Conference at the White sands Hotel, Mombasa on “One Health approach in veterinary training and practice” and presented a paper on “Ocular neoplastic lesions of the horse in Kenya from specimens received between 1967 and 2013” on 24th to 26th April 2013.

7. P. Kanyari organized a Training Workshop for MSc Students in Veterinary Epidemiology and Public Health by Distant learning in July 2013.

8. The Department of Veterinary Pathology, Microbiology and Parasitology in collaboration with Prof. Corrie Brown of University of Georgia USA, organized a regional Veterinary Pathology training workshop sponsored by FAO on April 23-27, 2012.

**Participants of the FAO sponsored workshop held at the Department of Veterinary Pathology Microbiology and Parasitology on April 23-27, 2014**
AWARDS
1. Prof. P.K Gathumbi was awarded the Veterinary Academia award of the Kenya Veterinary Association in April 2013

OUTREACH
Field visit in 14-23 February 2012
1) Dr. C.G. Gitao, visited Nyeri and Embu to discuss with project partners, stakeholders and dairy farmers. Several issues were discussed and awards were given to farmers.

2) Prof. P.K. Gathumbi was invited to preside over 2013 prize giving ceremony on 24/5/2013 at Mukangu Secondary School, P.O. Box 71, Karatina, and was awarded a certificate of appreciation in recognition of valuable service as BOG member.

3) The Department of Veterinary Pathology, Microbiology and Parasitology hosted and trained students from Kabete Technical Training Institute from June 24th to June 25th 2013.

4) The Department of Veterinary Pathology, Microbiology and Parasitology hosted and trained students from Kabete Technical Training Institute from June 25th to June 25th 2013
5) The Department of Veterinary Pathology, Microbiology and Parasitology hosted and trained students from Thika Technical Training Institute on 27th June, 2013

D. OTHERS
1) Prof. P.G. Mbuthia, was appointed as External Examiner at the Makerere University in the College of Veterinary Medicine, Animal Resources and Biochemistry, Department of Pathology.

1) P.G. Mbuthia, was appointed as External Examiner at Sokoin University of Agriculture in Tanzania from the dates July 18th to 22nd of July 2012.
2) S.M. Githigia, appointed to the Taskforce on National Pig Development Strategy (NPDS) by the Ministry of Livestock Development, Kenya.
3) Okumu Paul Onyango, nominated by the Department of Veterinary Pathology, Microbiology and Parasitology to attend a training at ILRI on Laboratory Animal Training in September 2012.
4) P.W.N. Kanyari, appointed as Acting Principal, Embu University College effective from July 16th, 2012.
5) P.K. Gathumbi appointed as a supervisor for Mr. Titus Muhu Kahiga PhD Thesis in the department of Pharmacy and Complementary / Alternative Medicine and the School of Health Science.
6) C.G. Gitao, assisted Marloes Philippo from SNV Netherlands “Development Organization to visit the Dean and collect information on out dairy training programmes. She was very happy and willing to create a viable network with our college 21-11/2012”.
7) C.G. Gitao, organized a visit by students from Free University of Berlin to the Faculty of Veterinary medicine in 2013 through funding by DAAD and support from VSF-Germany.

8) The German students play an interactive game with Kenyan students on how ASAL pastoralists cope with decision making
9) P.G. Mbuthia, travelled to the University of Ghana to teach courses in veterinary Pathology during his sabbatical leave and all expenses paid by University of Ghana.
10) P.N. Nyaga, examining of MSc Thesis for Joseph Maro Genchwere of Sokoine University of Agriculture entitled: “Spatial and temporal distribution of foot and mouth disease virus in the lake zone of Tanzania
11) P.N. Nyaga, examining a PhD student from Turin University (Isis) Victoriano Llopis) on USUTU virus prevalence in Kenya.
12) L.C. Bebora, appointed as one of the members in the evaluation panel during the evaluation and public presentation of Doctor of Science by Prof. Geoffrey Moriaso Ole Maloiy on Friday, June 7, 2013 at the Main Campus.
13) P.K. Gathumbi was invited to be the Master of ceremony at the CAVS tree planting day on 19th April, 2013.
14) P.N. Nyaga was appointed as External Examiner at the Department of Microbiology, School of Bio-security, Biotechnical and Laboratory Sciences, Makerere University for the month May/June 2013.
15) P.N. Nyaga, was offered a temporary appointment as VISITING SCHOLAR at the School of Veterinary Medicine, College of Agriculture and Consumer Sciences, University of Ghana during the Academic year 2013/2014.
16) Mbuthia P.G. is undertaking teaching at the University of Ghana during his sabbatical leave Dr. S.M. Githigia, attended a pig feeding trial review meeting on June 22nd 2012 in JMB Motel, Kerugoya.
17) S.M. Githigia, attended the National Pig Development Strategy (NDPS) Task force meeting from 17th to 18th September, 2012 at PCEA Milele Hotel South C Nairobi.
18) P.K. Gathumbi, attended a Performance enhancement training from 28th to 29th July 2012 and was awarded a certificate.
19) P.N. Nyaga, facilitated workshop on Pandemic Influenza Preparedness Multi-Sectoral Planning for Government of Kenya from July 29th to August 1, 2012 at Midlands Hotel in Nakuru.
21) Mary Njeru and Edith Keya, attended a records management workshop at the Central Catering Unit – CCU, Main Campus.
22) Julius K. Kibe, attended a two-month short term certification program on “Molecular epidemiology of food-borne pathogens” at the Ohio State University-Eastern Africa One Health Summer Institute held from May 21 to July 27, 2012 in Ethiopia and Kenya. He was awarded a Certificate of Participation.
23) Julius K. Kibe, attended a Leadership workshop at the Ohio State University- Eastern Africa One Health Summer Institute held from July 5 to July 7, 2012 in Arusha Tanzania. He was awarded a Certificate of Participation.
24) Lucy W.N. attended and participated in a Regional workshop on innovative training in Dar Es Saalam, Tanzania from 16th to 20th September, 2012.
25) Bebora L.C and Dr. C.G. Gitaoo, attended and participated in the RUFORUM Biennial Conference at the Imperial Resort Beach Hotel in Entebbe, Uganda, from 23rd to 29 September, 2012.
26) L.C. Bebora, participated in the Nairobi ASK Show in two capacities, both as a Chairman of Joint Poultry and Pigs sub-committee of ASK Livestock subcommittee and as a Judge of various Poultry classes and was awarded a certificate of appreciation.
27) P.G. Mbuthia, attended and participated in the Nairobi International Trade Fair for the Year 2012 and was awarded a certificate of appreciation.
30) P.K. Gathumbi lead the Tree planting ceremony on 2nd November, 2012.
34) L.W. Njagi, attended an inter-university One-Health workshop on co-teaching, curriculum development and partnerships organized by the OHCEA from 21-25 January 2013 in Nakuru County.
35) P.N. Nyaga, attended a One Health conference on co-teaching curriculum development partnerships, at Panari Hotel from 20th January to 25th January, 2013.
36) Paul Onyango Okumu, attended a training on Scientific communication and publishing at the University of Nairobi and was awarded with a certificate, on February 18th to 22nd, 2013.
37) Paul Onyango Okumu, attended a training on GIS and spatial analysis with a focus on raster analysis at the University of Nairobi, center for Sustainable Dryland Ecosystem and societies and was awarded with a certificate, on March 18th to 22nd 2013.
38) Paul Onyango Okumu, attended a professional course on research and grant proposal writing organized by the University of Nairobi Enterprises & Services Limited and was awarded with a certificate, in May, 2013.
39) Paul Onyango Okumu, attended a training on working with animals and animal vectors (ticks) under containments level I, II, and III facilities at International Livestock Research Institute 9ILRI) Nairobi.
40) C.G. Gitaoo, attended a meeting for National Agricultural Research System (NARS)/KAPAP CGS Collaborative research Projects, 18th June 2013 at KARI, Thika.
41) C.G. Gitaoo, attended a stakeholders workshop to initiate development of the Camel Policy on 10th –12th June, 2013 at Lyseric Hotel, Machakos.
42) L.C. Bebora, attended an Anthrax and Brucellosis workshop in Nakuru 26th to 28th June 2013.
43) PWN Kanyari is the University of Nairobi representative to the National Sanitary Pytosanitary Committee.
44) PWN Kanyari is the Chairman, Faculty Research Grants and Liaison Committee.
45) P.K. Gathumbi is the Chairman of the Biennial Scientific Committee. In April 2012, he led the committee in organizing the 8th Biennial Scientific Conference Jointly with the Kenya Veterinary Association at Safari Park Hotel. This event was part of the celebration of the Golden Jubilee of the Faculty of Veterinary Medicine University of Nairobi.
E. RESEARCH
The department has a number of funded research programs namely:

1) Diagnostic and control tools and strategies for Taenia solium cysticercosis – Funded by ASARECA and led by Prof. Maingi, N
2) Developing Capacity for implementing innovative Peste des Petits Ruminant (PPR) Control Strategies based on the – Funded by RUFOURM and led by Dr. Gitao, C.G.
3) Improvement of dairy productivity and marketing in sub-humid and pastoral areas of Kenya through improved dairy value Chain led by Dr. Gitao, C.G.
4) Enhancement of sustainable productivity of fish in Lake Victoria through control of pollutants with emphasis on endocrine disruptors and microbial pathogens Funded by VicRes and led by Prof. Mbuthia, P.G.
5) Enhancing village chicken productivity through parasite management for effective Newcastle disease vaccination in Kenya- Funded by RUFOURM and led by Prof. Bebora, L.C.
6) Controlling Infectious Bursal Disease through development of local vaccines and establishing effective vaccination programs - Funded by National Council for Research, Science, Technology and Innovations and led by Dr. Njagi, L.C
7) Enhancing sustainable livestock productivity and marketing through control of Rift Valley Fever- Funded by RUFOURM and led by Prof. Nyaga, P.N
8) Developing Reforms for promoting ASAL communities in drought mitigation and maximization of livestock resources for improved livelihoods through strategic linkages. A KAPAP Funded Project, Principal Investigator Prof. Kanyari Paul WN.
9) Commercial production of thermo-stable lactobacilli culture and Yoghurt from Camel milk supported by KAPAP, led by Dr. Gitao C.G.
10) Dr. C.G. Gitao is a Co-investigator:2012-2015 in a project on Dry land Milk Production: Building capacity for anchoring camels in the Milk Value Chains, Kenya EAAPP-OGCS-01-2011-06(700,000$); Others Prof Wahome(UoN), Tura(KARI), Lamuka(UoN)
11) Dr. C.G. Gitao is a Co-investigator: 2010-2013 in a project on Improvement of Dairy Productivity and Marketing In Sub-humid And Pastoral Areas of Kenya Through Improved Dairy Value Chain KAPAPCGS/FP/2011 (283,350$) Others: Kangara (KARI) Githunguri (KARI) Wamani (MoL)
12) Dr. C.G. Gitao is a Co-investigator: 2013-2015 in a project on Up-scaling Of Integrated Crop and Livestock System In Sub-humid and Pastoral Areas Of Kenya (16Mill. KES) Others: Kangara (KARI), Githunguri (KARI), Wamani(MoL)
13) Dr. C.G. Gitao is a Principal investigator: 2009-2012 in a project on Development of capacity to control PPR in East Africa; A regional University Forum For capacity Building in Agriculture (RUFOURM- RU 2009 GRG 17 TADS) project funded by B. Gates Foundation
14) M Sc. Project funding: Dr. C.G. Gitao, assisted the following to obtain funds:-
   a)Maina Migwi: NCST/ST &LRCD/4th call MSC 2012: “Improvement of Peste de Petits ruminant diagnosis in Kenya through experimental infection and application of immunohistochemistry;” 193,000 KES. From National council of Science and Technology
b) Kibore Benson: NCST/5/003/3rd cal IMSC 2011: “Determining the prevalence of antibodies against foot and mouth disease virus in livestock using the structural and non-structural protein ELISA.” 184,890 KES. From National council of Science and Technology

15) Prof. P.K. Gathumbi is a co-investigator in a project on Strategies to Improve Rabbit Value Chain Funded by the National Commission for Research Science and Technology (P.I is Prof. Margaret Wanyoike Department of Animal production. Dr. P.O. Okumu of The Department of Veterinary Pathology Microbiology and Parasitology is one of the postgraduate student in the project and his project is on Rabbit diseases.

16) Prof. P.K. Gathumbi, L. W. Njagi, D.N. Karanja, I.R. Mulei and Michael Coughneur (2013) were awarded a grant to undertake, “A multistakeholder study to enhance the control of livestock disease that limit production and market access in dryland sites: Marsabit Kenya”. The project was funded by the Center for Sustainable Dryland, University of Nairobi and it conducted a participatory workshop with stakeholders in Marsabit county.

Prof. P.K. Gathumbi and Dr. I.R. Mulei, in a meeting with stakeholders at Marsabit to discuss on diseases that limit market access of livestock on April 20th, 2013.

Dr. Gitao C.G.” Improvement Of Dairy Goat Productivity And Development Of Camel Milk Fermented Products. Phase 2”

Prof. P.K. Gathumbi, progressively contributes in conservation of medicinal plants in a Botanical garden at the College of Agriculture and Veterinary Sciences.

Prof. P.K. Gathumbi in Botanical garden of medicinal plants at CAVS field station established under the project on, ‘evaluation and commercialization of medicinal plants’ extracts for improved livelihoods: a case study of East Coast fever’. Funded by World Bank grant through Kenya Agricultural Productivity (KAPP) led by Prof. P.K. Gathumbi, Department of Veterinary Pathology, Microbiology and Parasitology

DEPARTMENT OF CLINICAL STUDIES
BACKGROUND AND INTRODUCTION OF THE DEPARTMENT

The Department of Clinical Studies is one of the five departments comprising the Faculty of Veterinary Medicine, in the College of Agriculture and Veterinary Sciences and located on the Upper Kabete Campus of the University of Nairobi. Currently, there are three discipline based academic sections; namely Medicine, Surgery and Theriogenology. Teaching is complemented by the oldest and only Veterinary Teaching Hospital (VTH). This is organized under the Large Animal Clinic which hosts the Large Animal Surgical Theatre, Theriogenology Theatre and Large Animal Stalls and the Small Animal Clinic, which comprises Consultation Rooms, Small Animal Pharmacy, Surgical Theatres and Kennels for Boarding and Hospitalization of Pets, mainly Dogs and Cats. Diagnostic imaging services include Conventional and Digital X-Ray Machine, and Ultrasound. The Haematology, Clinical Chemistry and Microbiology Laboratories provide support for in-house and referral samples submitted by the Ambulatory Services, Private Practitioners and Research Institutions.

Dr. John Mande, Chairman
Department of Clinical Studies

Majority (60 %) of the 30 academic staff holds PhD degrees, and these include 10 Professors, 8 Senior Lecturers, 6 Lecturers, and 6 Tutorial Fellows. Three clinicians support the Income Generating Activities of the VTH which complement the revenue base for finance Teaching, Research, Diagnostic, Ambulatory, Herd Health, and Extension activities.

An important feature of the department is the number of the Professors and Lecturers in the department display visible administrative and leadership functions in the University of Nairobi (the Deputy Vice Chancellor - Administration and Finance and the Dean of the Faculty of Veterinary Medicine) and Public Universities (the Chancellor of Karatina University and the Deputy Vice Chancellor – Administration and Finance – Egerton University), Kenya Veterinary Association and Kenya Veterinary Board. Others provide technical and management support to the Veterinary Faculty Farm at Kanyariri and the Clinical Studies Income Generating Units, besides conducting cutting edge research, teaching and supervision of undergraduate and postgraduate students and other functions.

ACADEMIC PROGRAMMES

The academic programmes offered in the department

- Master of Science Clinical Studies (MSc Clinical Studies)
- Master of Science Wildlife Health and Management (MSc Wildlife Health and Management)
- Master of Science Theriogenology (MSc Theriogenology)
- Master of Veterinary Medicine (MVet Med)
- Master of Veterinary Surgery (MVet Surg)
- Doctor of Philosophy Clinical Studies (PhD Clinical Studies)

In order to facilitate collaboration, efficiency and growth, the Department coordinates teaching of the Bachelor of Science Wildlife Management. In addition, it supports teaching of courses in the Faculty of Veterinary Medicine, such as Diploma Leather Technology, Bachelor of Science Leather Science and Technology, Bachelor of Science Fisheries and Aquaculture Management, Master of Science Veterinary Epidemiology and Economics and Master of Science Natural Products and Bioprospecting. These academic programmes attract a sizeable of undergraduate and postgraduate students from the country and abroad. International students currently admitted in the undergraduate programmes come from South Africa, South Sudan; while postgraduate students include those from Ghana, Japan and South Africa. The current undergraduate and postgraduate student population in the department stands at 286 students.

The research activities are demonstrated by the large number of papers published in peer reviewed scientific journals and presented at national and international scientific conferences and workshops. Academic staff has attracted significant research grants and this trend is expected to grow during the strategic plan period.

COLLABORATIVE LINKAGES

The department collaborates with several research partners including;

- Donkey Sanctuary Worldwide.
- Kenya Veterinary Association.
- Kenya Veterinary Board.
- Kenya Wildlife Service.
- International Livestock Research Institute.
- World Society for Protection Animals.
- Pest Control Products Board.
Industry partners are drawn from a pool of reliable suppliers of animal feeds, surgical equipment and consumables, veterinary pharmaceuticals and biological as well as technical services. Some of these industry partners include:
- Unga Feeds Ltd
- Lesukut Ltd
- Coopers (Kenya) Ltd
- Norbrook (K) Ltd
- Bimeda-Assia Pharmaceuticals Ltd
- Department of Clinical Studies

EXTERNAL EXAMINERS 2012/2013
DEPARTMENT OF CLINICAL STUDIES

<table>
<thead>
<tr>
<th>NAME</th>
<th>DEPARTMENT</th>
<th>INSTITUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Professor Mkumbukwa M.A. Mtambo</td>
<td>Department of Veterinary Medicine and Public Health,</td>
<td>Sokoine University of Agriculture,</td>
</tr>
<tr>
<td>2. Prof. Noel Lemree Kanuya Associate Professor</td>
<td>Department of Veterinary Medicine and Public Health,</td>
<td>Sokoine University of Agriculture</td>
</tr>
<tr>
<td>3. Prof. Bittegeko, Salvatory Balthazar Pulcheria Rweyemamu Professor: Veterinary Surgery &amp; Imaging</td>
<td>Department of Veterinary Medicine and Public Health,</td>
<td>Sokoine University of Agriculture</td>
</tr>
<tr>
<td>4. Evans L.N. Taracha</td>
<td>Senior Veterinary Immunologist/Vaccinologist</td>
<td>Institute of Primate Reasearch</td>
</tr>
<tr>
<td>5. Prof. Charity Wangui Gichuki</td>
<td>Head of Research and Development Bureau</td>
<td>Presbyterian University of East Africa Kenyatta University</td>
</tr>
<tr>
<td>6. JOHN KIMANI MUNGAI</td>
<td>Senior Analyst</td>
<td>Government Chemist’s Department</td>
</tr>
<tr>
<td>7. Mbaruk Abdalla Suleiman B.</td>
<td>Principal Research Scientist</td>
<td>Institute of Primate Research</td>
</tr>
</tbody>
</table>

POSTGRADUATE STUDENTS GRADUATION LIST – DEPARTMENT OF CLINICAL STUDIES
The following students graduated with the Masters in Clinical Studies degrees as indicated below

<table>
<thead>
<tr>
<th>Name</th>
<th>Registration no</th>
<th>Title of Thesis</th>
<th>Supervisors</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. DR. SHARON TSIGADI</td>
<td>J56/7370/2004</td>
<td>Radiographic and Pathological Features of Urinary Conditions in Dogs in Nairobi, Kenya</td>
<td>Prof. Susan W. Mbogua Prof. Peter K. Gathumbi Dr. John D. Mande</td>
</tr>
<tr>
<td>2. DR. GILBERT KIRUI</td>
<td>J56/7000/2003</td>
<td>Factors associated with Health and Production of Camel calves in Marsabit District of Kenya</td>
<td>Prof. G.K. Gitau Prof. C.M. Mulei Dr. A.G. Thaiyiah</td>
</tr>
<tr>
<td>3. MUGO SAMUEL GITAU</td>
<td>J56/72675/2008</td>
<td>Prevalence and Risk Factors of Conditions causing lameness in sheep under free range grazing system in Kajiado District, Kenya</td>
<td>Prof. Njenga Munene John Dr. James Nguhi-Mwangi Dr. Andrew Gitau Thaiyiah</td>
</tr>
<tr>
<td>4. ROYFORD MAGIRI BUNDI</td>
<td>J56/78114/2009</td>
<td>The Prevalence, Antibacterial Sensitivity and Usefulness of Petrifilms as a Diagnostic tool for Bovine Mastitis in Mukurwe-ini and greater Nakuru Districts, Kenya</td>
<td>Prof. Charles M. Mulei Prof. George K. Gitau Prof. John Vanleeuwen</td>
</tr>
</tbody>
</table>
PUBLICATIONS BY STAFF IN THE DEPARTMENT OF CLINICAL STUDIES


WORKSHOPS AND CONFERENCES ATTENDED BY MEMBERS OF STAFF IN DEPARTMENT OF CLINICAL STUDIES


2. Tsuma Trevor attended Inter-University workshop to bring together faculties from One Health Central and East Africa (OHCEA) institutions to nurture collaboration, co-teaching, curriculum review and partnership, 21st -25th January, Panari Hotel, Nairobi, Kenya. Role: Presenter and participant.


5. Tsuma Trevor attended livestock emergencies guidelines (LEGS) training at Clinical Studies Department, University of Nairobi, 7th to 9th November, Nairobi, Kenya.


10. J Muraya, H Mutembei and C Mulei; Rabies and population control strategy of stray dogs and cats in Nairobi slum areas: A retrogressive study on control of rabies in selected slum areas in Nairobi. *One health conference* 2013


12. Thaiya Andrew attended Prince Mahidol Award conference (PMAC) on One Health. 29th January to 2nd February 2013. Bangkok, Thailand

13. Thaiya Adrew attended 47th Annual Scientific Conference between 24th and 26th April 2013 at Whitesands Hotel, Mombasa


15. Muthee John participated as a team member of Veterinary emergency Response Unit (VERU) in the Tana Delta 4th -8th September 2012 after the tribal clashes

16. Muthee John attended a training course on The Livestock Emergency Guidelines and Standards (LEGS) held at the Faculty of Vet Medicine 7th-9th November 2012 .

17. Muthee John participated in the KAWAN's Animal Welfare Workshop held at the Kabete campus on 5th April 2013


COMMUNITY OUTREACH AND HERD HEALTH PROGRAMMES

The Department undertook the following community outreach and herd health activities
- 5th year Herd Health Trip to Olpejeta Conservancy on 14th December 2012.
- Tree planting, Herd Health and Community Outreach at Kibwezi 16th and 17th April 2013

CONSULTANCIES


b. East Africa Agricultural Productivity Programme - A project on Genetic Improvement on East African zebu cattle for milk production in ASALs Makueni District between University of Nairobi researcher Prof. David Kihurani, Egerton University and Kenya Agricultural Research Institute (KARI) Lanet.

c. National Council for Science and Technology - A project by Dr. John Muthee funded by National Council for Science and Technology.


e. One Health East and Central Africa (OHCEA). A project between University of Nairobi researcher Dr. Andrew Thaiyah and USAID on multi-disciplinary approach to disease surveillance and outbreak response which encompasses animal health, human health and the environment.

f. World Society for Protection of Animals and Clinical Studies Department Management of Animals in Disasters. A project co-ordinated by Dr. Henry Mutembei.

g. Embryo Transfer Reference Laboratory

VETERINARY FARM-KANYARIRI

Participation in the Nairobi International Trade Fair 2013 Awards

<table>
<thead>
<tr>
<th>DAIRY UNIT</th>
<th>POULTRY UNIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dairy cows</td>
<td>Five layers won 1st position each</td>
</tr>
<tr>
<td>prize.</td>
<td>One layer won 2nd position.</td>
</tr>
<tr>
<td></td>
<td>Two cows won first prize.</td>
</tr>
<tr>
<td></td>
<td>One layer won 3rd position.</td>
</tr>
<tr>
<td></td>
<td>Two cows won 2nd prize.</td>
</tr>
<tr>
<td></td>
<td>Six eggs won 2nd position</td>
</tr>
<tr>
<td></td>
<td>Four cows won 3rd prize.</td>
</tr>
<tr>
<td></td>
<td>Eggs</td>
</tr>
<tr>
<td></td>
<td>Two cows won 4th prize.</td>
</tr>
<tr>
<td>Best udder</td>
<td>One layer won 3rd position.</td>
</tr>
<tr>
<td></td>
<td>Two 1st class prize.</td>
</tr>
<tr>
<td></td>
<td>One layer won 2nd position.</td>
</tr>
<tr>
<td></td>
<td>One 2nd class prize.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>PIG UNIT</th>
<th>LAYERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pigs</td>
<td>Five layers won 1st position each</td>
</tr>
<tr>
<td>2nd position.</td>
<td>One layer won 2nd position.</td>
</tr>
<tr>
<td></td>
<td>Two Female Champion (gilt) 1st and</td>
</tr>
</tbody>
</table>

53
College Annual Report: 2012/2013
Five won 1st position each
Three won 2nd position each
One won 3rd position

FARM PRODUCE
Bale of hay - One bale won 1st and 3rd position
Bananas - 1st position

TREE PLANTING AND PLOUGHING CONTEST
Tree planting was done in 2012/2013. 15,000 trees were planted during the long and short rains. The ASK ploughing contest was held in October 2013 the Veterinary Farm.

STUDENTS ATTACHMENTS
Vet Farm also offered attachment to 30 students who are undertaking Bachelor of Vet medicine for 8 weeks.

FACULTY OF AGRICULTURE
The Faculty structure has four departments-- Plant Science & Crop Protection (PS&CP), Land Agricultural Resources Management & Agricultural technology (LARMAT), Food Science, Nutrition & Technology (FSNT), Agricultural Economics. The department of Animal production, housed in the Faculty of Veterinary Medicine, services the two Faculties. Each of the departments is endowed with highly qualified academic and technical support staff. About 95% of the academic staff in the Faculty are trained up to PhD level. The Faculty currently has eight (8) undergraduate and nineteen (19) Postgraduate degree programmes. The programmes have a strong practical component, which puts emphasis on participation in carrying out relevant research and outreach activities aimed not only in increased agricultural production, but also in environmental protection. The programmes are regularly reviewed to incorporate emerging scientific and technological issues in the agriculture, food and environmental sciences. In partnership with researchers from other universities, and national and international research institutions, staff have been involved in cutting-edge research in various fields, ranging from agronomy, crop protection and soil sciences, to food technology and nutrition, and agricultural Economics.

Given that Agriculture is still the backbone of the economy and the main source of export earnings, the Faculty continues to play a pivotal role of improving livelihoods of the Kenya population. Consequently, significant breakthroughs have been made particularly in Diagnostics of Crop Pests and Diseases, Integrated Pest Management (IPM), Crop Improvement, Appropriate Crop Husbandry Technologies to mitigate the vagaries of climate change, production of environmentally friendly goods and services, diversified food products and expertise ready to provide extension and community services. To this end the Faculty has commercialized 11 varieties of beans that are now being sold in supermarkets and is a leader in production of the Bio-fertilizers. The Faculty also has established local and international partnerships with institutions and scientists to enable it execute its functions better. This has expanded opportunities for capacity building, knowledge sharing and fund raising.

Programmes Offered in the Faculty

The faculty offers the following undergraduate programmes:

1. BSc. Agriculture
2. BSc. Food Science and Technology
3. BSc. Food, Nutrition and Dietetics
4. BSc. Range Management
5. BSc. Management of Agro-ecosystems & Environment
6. BSc. Agribusiness Management
7. BSc. Agricultural Education and Extension
8. BSc. Horticulture
**Student enrollment in the faculty**

<table>
<thead>
<tr>
<th>Degree Program</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSc. Food Science and Technology</td>
<td>35</td>
</tr>
<tr>
<td>BSc Agriculture</td>
<td>93</td>
</tr>
<tr>
<td>BSc Range Management</td>
<td>30</td>
</tr>
<tr>
<td>BSc Agric Education &amp; Extension</td>
<td>61</td>
</tr>
<tr>
<td>BSc Agribusiness Management</td>
<td>92</td>
</tr>
<tr>
<td>BSc Food Nutrition &amp; Dietetics</td>
<td>35</td>
</tr>
<tr>
<td>BSc. Management of Agro-Ecosystems &amp; Environment</td>
<td>26</td>
</tr>
<tr>
<td>BSc Horticulture</td>
<td>27</td>
</tr>
</tbody>
</table>

**International students**

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Felicien Ndaruhutse (MSc. Plant Breeding)</td>
<td>Rwanda</td>
</tr>
<tr>
<td>Maliha H. Saggaf (MSc. Plant Breeding)</td>
<td>Tanzania</td>
</tr>
<tr>
<td>Mpunda Rabson Mulenga (MSc. Crop Protection)</td>
<td>Zimbabwe</td>
</tr>
<tr>
<td>Lwabulala Dickson Maximilian (MSc. Crop Protection)</td>
<td>Tanzania</td>
</tr>
<tr>
<td>Caleb Mahoya (PhD Crop Protection)</td>
<td>Zambia</td>
</tr>
<tr>
<td>Mudde Barnabas (PhD Crop Protection)</td>
<td>Uganda</td>
</tr>
<tr>
<td>Sserumaga Julius Pyton (PhD Plant Breeding)</td>
<td>Uganda</td>
</tr>
<tr>
<td>Gerald Kyalo (PhD Plant Breeding)</td>
<td>Uganda</td>
</tr>
<tr>
<td>Ndusha Nabintu Bintu (DRC)</td>
<td>Malawi</td>
</tr>
<tr>
<td>Mahinda Athuman Juma (Tanzania)</td>
<td>Malawi</td>
</tr>
<tr>
<td>Rocha Antonio Jose (Mozambique)</td>
<td>Malawi</td>
</tr>
<tr>
<td>Rumongi Alfred Tabaro (Rwanda)</td>
<td>Malawi</td>
</tr>
<tr>
<td>Woldemichael Fikir Alemayehu (Ethiopia)</td>
<td>Malawi</td>
</tr>
<tr>
<td>Sekandi Joseph (Uganda)</td>
<td>Malawi</td>
</tr>
<tr>
<td>Kaiira Moses Godfrey Bagiire (Uganda)</td>
<td>Malawi</td>
</tr>
<tr>
<td>Katumba Balikutenda Muthalib (Uganda)</td>
<td>Rwanda</td>
</tr>
<tr>
<td>Osaliya Richard (Kampala)</td>
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<tr>
<td>Egeru Anthony (Kampala)</td>
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<td>Paul Anguria (Uganda)</td>
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<tr>
<td>Suleiman Muhammad (Nigeria)</td>
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<tr>
<td>Uche Peggy Adoabi (Nigerian)</td>
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<tr>
<td>Mkochi Sarah Lewis (Malawian)</td>
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<tr>
<td>Banda Lydia Ndximenza (Malawian)</td>
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<td>Mpeniuwawa Kondwani (Malawian)</td>
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<td>Nyasulu Alice (Malawian)</td>
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<tr>
<td>Soni Mitaben Vinay (Indian)</td>
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<td>Zinet Nezir (Ethiopian)</td>
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<tr>
<td>Baluku Safari (DRC Congo)</td>
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<tr>
<td>Murye Jesca Wude (Sudanese)</td>
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</tr>
<tr>
<td>Habimana Jean de Dieu (Rwanda)</td>
<td>Uganda</td>
</tr>
</tbody>
</table>

**Number of graduates in the 2013**

<table>
<thead>
<tr>
<th>Degree</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>PhD</td>
<td>7</td>
</tr>
<tr>
<td>MSc</td>
<td>87</td>
</tr>
<tr>
<td>Postgraduate Diploma</td>
<td>4</td>
</tr>
<tr>
<td>BSc Agriculture</td>
<td>53</td>
</tr>
<tr>
<td>BSc. Agricultural Education &amp; Extension</td>
<td>27</td>
</tr>
<tr>
<td>BSc Agribusiness Management</td>
<td>29</td>
</tr>
<tr>
<td>BSc. Food Nutrition &amp; Dietetics</td>
<td>31</td>
</tr>
<tr>
<td>BSc. Food Science &amp; Technology</td>
<td>38</td>
</tr>
<tr>
<td>BSc Range Management</td>
<td>9</td>
</tr>
<tr>
<td>BSc. Mngl. Of Agro-ecosystems</td>
<td>29</td>
</tr>
<tr>
<td>Diploma in Crop Protection</td>
<td>6</td>
</tr>
<tr>
<td>Postgraduate Diploma</td>
<td>4</td>
</tr>
</tbody>
</table>
Message from the Chairman, Department of Food Science Nutrition and Technology

Welcome to the Department of Food Science Nutrition and Technology (DFSNT) where we not only manufacture or produce food but also qualified graduates as our contribution towards ensuring that the University community and the larger public are able to access nutritious and safe food and achieve optimal utilization through nutrition and dietetics.

The department is endowed with numerous resources, especially human resources: 12 teaching staff with PhDs out of which 5 are associate and full professors. Five of the staff members are under staff development as PhD students. We train both graduate and undergraduates in the fields of Food Science, Food Nutrition and Dietetics, Applied Human Nutrition, and Food Safety and Quality. The Department is also a proud producer of milk products including and not limited to cheese, yoghurt, fermented milk (Mala), pasteurized milk and ice cream. Visitors can also sample meat and pork products among others from our pilot plant. We are also happy to announce that we are innovating in rabbit meat products. For more information, welcome and sample some of our programmes at www.foodtech.uonbi.ac.ke.

Journal of Human Nutrition Dietetics Food Sciences and Technology (J.HNDFST)

DFSNT is proud to announce its latest innovation, The Journal of Human Nutrition Dietetics Food Sciences and Technology (J.HNDFST). This biannual open access peer reviewed international journal, is a University Category No in-post

- Professors: 11
- Ass. Professors: 23
- Senior lecturers: 13
- Lecturers: 25
- Tutorial fellows: 11
- Graduate Assistant: 1
- Principal Technologists: 1
- Chief Technologists: 3
- Senior Technologists: 18
- Technologists: 22
- Farm Managers: 2
- Total: 129
of Nairobi scientific product that is published under the aegis of the Department of Food Science Nutrition and Technology. Articles are submitted to the Executive Editor at j.hndfst@uonbi.ac.ke and then sent to reviewers whose opinion form the base on which they are accepted, rejected or returned to the author(s) for enhancement. In keeping with the Departments Performance Contract, the journal transmits new knowledge on various dimensions of nutrition, dietetics, food science, safety and processing without discrimination.

As part of University of Nairobi platform, the journal supports the scientific invention, innovation and progress in nutrition, dietetics food and related agriculture (food security, and consumer disciplines). It provides a forum for researchers, academicians, practitioners and food industry workers to disseminate their findings. Its purpose is to provide a platform for transmitting and sharing highly scientific cutting edge research products, allow young students (students) to manifest their potential as researchers and also reach out to make visible community knowledge and innovations. Engaging communities, hence inclusion of articles in Swahili, in contributing to the journal is poised to cause a paradigm shift in perception of generation and utilization of knowledge as communities actively engage in producing, demanding and utilising research products while showcasing their innovations. The community outreach on a continuous plane targets demystifying scientific research and empowering citizens as they increasingly recognise the need and usefulness of research and understand better their role in demanding and creating relevant research for their wellbeing hence actively engage in generation, and utilization of research products. Young scientists will get a platform to publish abstracts from their research work hence enhance their visibility as scientists.

“DFSNT takes this opportunity to invite you to submit articles that you desire to have manifested in a high quality publication platform and thus book your space in its first issue to become part of DFSNT’s history making”.

Correspondence and Submissions: All correspondences are sent to the Chief Editor at the address given below. Manuscripts are submitted electronically as e-mail attachments.

E-mail: j.hndfst@uonbi.ac.ke
Access: http://journals.uonbi.ac.ke/index.php/JohnDFST

Editorial Board
Executive Editor: Prof. Samuel K Mbugua
Editor and Journal Manager: Prof. Wambui Kogi-Makau
Editor: Dr. Patrick Kamau
Assistant Editor: Dr. Catherine Kunyanga
Assistant Editor: Dr. G.O. Abong’
Assistant Editor: Dasel W.M.Kaindi

Introduction
The Department of Food Science, Nutrition and Technology (DFSNT) is among the four Departments in the Faculty of Agriculture, College of Agriculture and Veterinary Sciences (CAVS) that is located off Kapenguria Road, 15 Kms to the Northwest of Nairobi. DFSNT degree programmes have evolved from one to six; both in undergraduate and postgraduate with a certificate level course in food safety and quality waiting to be launched. DFSNT serves a wide range of students within Kenya and all over the world. Our programmes have remained competitive as the department attracts students from across Africa including Nigeria, Malawi, Uganda, DRC, Somalia and Mozambique. A number of research activities are carried out by the researchers and students ranging from food security, value addition, and quality management and processing. DFSNT research and development activities address both national and regional issues which lend themselves to key aspects of Kenya’s vision 2030.

1.2 Vision, mission, core values and objectives

1.2.1 Vision
To be a global leader in training, research, outreach and consultancy services in post-harvest handling and value addition of agricultural produce, food bioprocessing and technology, food nutrition and dietetics, food safety and quality and natural resource sciences in order to realize sustainable and secure livelihoods.

1.2.2 Mission
To pursue, excel and maintain a world-class leadership role in the quest for knowledge by way of quality research, capacity building, consultancy and innovative outreach in order to contribute to food productivity and safety and secure livelihoods through sustainable value addition and natural resources management.

1.2.3 Core Values
The Department operates within certain treasured beliefs, which have contributed to its success. The Department as part of the College of Agriculture and Veterinary Sciences shall endeavor to uphold the following values:

- Uphold professionalism and ethics in all its dealings with its stakeholders.
- Be accountable and transparent in all its operations.
- Uphold integrity, honesty and quality in training and all other activities.
- Promote participatory management and effective teamwork in all its activities and operations.
- Promote and maintain linkages with industry, other institutions and alumni.
- Uphold dignity of all members of staff and students.
- Recognize and esteem ideas and innovations.

2. Outreach activities

Every year, the department reaches out either to the communities, hospitals or industries in order to maintain important linkages as well as contribute towards national development. This year the department had a number of outreach activities but we elaborate on two major ones which largely involved our students.

2.1 Western Crescent

The BSc. Food Science and Technology students, class 2013/2014 made the much coveted visit to many processing industries which stretch towards the western Kenya. The students visited canning industries, vegetable processing and tea industries, beverage, sugar and fish industries among others. This visit remains important part of the food science curriculum where students manage to link what is taught in class to realities in industry.
2.2 Community Nutrition Problem Diagnosis and Outreach 2013, Kibwezi

This year DFSNT Community Outreach and Training Programme was conducted on the 7th to 12th April 2013 in Kikumbulyu Location in Kibwezi District. The events involved a community survey which determined the nutrition and food safety problems in the area. Piloting for this exercise was carried out in Ndeiya in Kikuyu.

The main objective of the survey was to:

i. Course work for the students: Community Nutrition Problem diagnosis
ii. To determine the demographic characteristics of households,
iii. To assess household food safety, food security and livelihoods as well as dietary intake of the children
iv. To assess the morbidities, nutritional status, immunization coverage, supplementation, worm infestation, haemoglobin iron status of children aged 6 to 59 months.
v. Referral of malnourished and sick children
vi. Deworming of children
vii. Community education and dissemination of survey findings through a Chief’s Baraza

Outcomes:

- During the survey 158 households were visited.
- Preliminary results of survey:
  - 47% of households were farmers while 27% were casual labourers
  - 60% of households bought food from the market while 3% depended on food aid.
  - 9% of households lacked toilet facilities and hence shared with their neighbours.
  - 1 out of 10 children had worm infestation.
  - 3% of the mothers exclusively breastfed their children.
  - Global Acute Malnutrition was 3%, moderate stunted children were 48% while prevalence of Iron Deficiency Anaemia was 33%.
- 400 children below 5 years were dewormed
- Final report of the findings will be submitted to the area of study as part of feedback.
3. Capacity building and personal development
In this period, a number of DFSNT staff attended courses and trainings within and outside Kenya. Dr. Kunyanga attended Food Safety course in Europe while Dr. Abong’ was in Belgium and Germany for training and exchange programme.

Dr. G. Abong’ (back right) during a get together for food safety trainees in University of Ghent, Belgium. Left is Dr. Abong’ in the Technical University of Dresden labs in Germany during Mundus exchange programmes.

4. Conferences, workshops
4.1 EAAP funded cassava value addition project
University of Nairobi executed part of the cassava value addition project. This project is led by Prof. S. Shibairo and has in its team from Prof. M.W. Okoth, Dr. G. Abong’ and Mr. P. Lamuka.
4.2 RELAOD Meat project
- Dr. C. Kunyanga, Prof. M.W Okoth and Mr. Lamuka finalized a major project on Meat Value Chain in the RELAOD Project “Reduction of losses and value addition by strengthening small and medium enterprises in food processing to sustain value chains in East African postharvest systems” sponsored by the Federal Ministry of Education, Germany.

Activities
- Baseline surveys on meat processing among pastoralist communities and slaughterhouses in Kenya
- Market survey on meat products and technologies used
- Training of SMEs on value addition of meat.

4.3 SPIRIT: Strengthening Potato Innovation through Research and Innovative Technologies
This is a capacity building project running across East Africa was finalized and contracts signed by the UoN Vice chancellor. This project, coordinated by Dr. George Abong’ brings four East African countries (Uganda, Rwanda, Tanzania and Kenya) and two European organizations and is funded by the European commission.

5. Other activities
5.1. Tree planting
CIC Chairman, Mr. Charles Nyachae addressing participants, Dr. G. Abong’ of DFSNT (Centre) among those who planted trees

A New Project

A new research and technology development project namely; ERAfrica – IC – 025: FBRE-PRO 2014 – 17, has been funded by ERAfrica group of funding parties (GFP) under the EU’s 7th Framework program. The project on “Tailored fermentation for delivery of whole grain and fiber rich cereal products: promoting dietary fiber intake in Africa and Europe” is conceptualized and designed on the basis of bio-functional and health enhancing properties associated with dietary fibers as prebiotics and modulators for good gut’s microbiome. Invitro bio-modification of dietary fiber in food systems through appropriate fermentation and particularly wholegrains cereals like in sorghums and millets can be expected to lead to development of nutritionally enhanced and healthy therapeutic products that are acceptable in Africa and Europe taking any cultural constraints into consideration. Such products would take advantage of rapidly growing global niche market for healthy foods, as well as have a definitive and verifiable healthy impact on deserving populations both in Africa and Europe.

DEPARTMENT OF AGRICULTURAL ECONOMICS

The Department of Agricultural Economics is as old as the Faculty of Agriculture, established in 1970. Initially the department offered various service courses for BSc Agriculture only, but has now diversified to offer several undergraduate and postgraduate programmes. In partnership with local and international research institutions, the department conducts research in agricultural economics, policy and agribusiness. The two MSc programmes are also offered at PhD level. These programmes are reviewed to reflect emerging scientific and technological issues in agriculture, food, environmental, applied economics, Extension and educational sciences. Notable among such rapid changes relate to knowledge in the areas of biotechnology, strategies in extension, information technology, agribusiness management and entrepreneurship.

Dr. Fred Mugivane information technology, agribusiness management and entrepreneurship
Chairman, Agricultural Economics development and environmental quality. Emphasis is placed on practical and applied training, research and outreach. The training provides knowledge and skills in agricultural production, marketing value chain environmental issues.

BRIEF REPORT ON DEPARTMENTAL ACTIVITIES 2012/2013

The Department of Agricultural Economics 2012/2013 activities included the following:

- Participated in the 10th CAADP Partnership Platform (CAADP PP) on 19th to 21st March, 2014 at the International Conference Centre in Durban, South Africa – Prof. Willis Oluoch – Kosura represented the Department. This was a comprehensive Africa Agricultural Development program organized by The African Union Commission and NEPAD Agency.
- Participated in A Stakeholder Workshop to validate The Capacity Needs Assessment for Establishment of Kenya’s Strategic analysis and knowledge management system on 13th February, 2014 at the Crowne Plaza Hotel – Nairobi. Knowledge products to improve policy making track progress, benchmarking etc of African Agriculture Development was represented by the Chairman, Dr. Fred I. Mugivane.
- Participated to the Triple – L Workshop at the Sven Love’n Centre for Marine Sciences at Tjarno, Sweden on 11th February to 14th February, 2014. The purpose was to develop joint research grant to the Swedish Research Council and Formas – within the Framework of Land, Livestock and Livelihood Dynamics in Dryland Systems Initiatives – The Department was represented by Dr. David Jakinda.
- The Department participated in the Joint Writer’s Workshop for CAE, CAVS and CEES from 2nd to 6th February, 2014 at Kenya Wildlife Training Institute, Naivasha. Dr. Fred I. Mugivane represented the Department.
- The Department participated in the AGRA – WAGENINGENUR WORKSHOP held on 15th – 17th January, 2014. The Department was represented by Mr. Evans Ligare Chimoita and Ms Mary Chao Babu. Both are PhD candidates and Tutorial Fellows in Agricultural Education and Extension.
- Dr. John Mburu travelled to South Africa as an External Examiner for Ezekiel Ndunda who was defending his PhD Oral Examination at the University of Pretoria on November 22nd, 2013.
- The Department was represented by six researchers at the 4th, CAAAE Tunisia. This was the 4th International Conference of the African Association of Agricultural Economists held at Hammamet, Tunisia. The six were Prof. Willis Kosura, Prof. O.L.E Mbatia, Dr. Rose Nyikal, Dr. John Mburu, Ms Mary Nthambi, and Ms Jane Chege. Dr. Nyikal is the current Secretary/Treasurer for AAAE.
- Dr. Fred Mugivane, Chairman, Agricultural Economics attended and participated in MSc – CMAAE Curriculum Review Workshop held on July 29th August to 2nd September 2013 at the University of Pretoria, South Africa.
- The Chairman of the Department participated in Intellectual Property Rights Sensitization Workshop for Heads of Departments and other stakeholders held on 17th – 18th July, 2013 at Central Catering Unit Hall.
The Department participated in a workshop aimed at realigning its strategic plan with the College and University strategic plan held at the Kenya School of Monetary Studies (KSMS) from 16th – 18th May, 2013. Dr. Fred Mugivane represented the Department.

On 19th March, 2014 the Chairman of Agricultural Economics Dr. Fred Mugivane, attended the launch of the University of Nairobi Student One Health Club, an organization that brings together Veterinary, Medical, Public Health, Agriculture and Nursing Students from the University of Nairobi.

The Chairman of the Department attended the Sensitization Workshop on Postgraduate Matters for Deans/Directors, Chairmen of Departments held on 10th December, 2013 at the Central Catering Unit (CCU).

DEPARTMENT OF PLANT SCIENCE AND CROP PROTECTION

The Department of Plant Science and Crop Protection started as two departments, Department of Crop Production and Department of Applied Science, in the Faculty of Agriculture in 1970/71 within the College of Agriculture and Veterinary Sciences (CAVS) at the Upper Kabete Campus. The two departments were later re-organized, merged and renamed the Department of Crop Science. In 1997, the Department of Crop Science was split into two departments namely, Department of Crop Science and Department of Crop Protection. In 2005, the two departments were merged to form the Department of Plant Science and Crop Protection. After the merger, the department was re-organized into two sections; Crop Science and Crop Protection. The Crop Science Section comprises Agronomy, Horticulture, Plant Breeding and Biometry units, while the Crop Protection Section comprises Plant Pathology and Entomology Units. The Department teaches most of the courses for the BSc Agriculture Programme offered by the Faculty of Agriculture. It offers a BSc course in Horticulture, Diploma in Crop Protection, a certificate course in Floriculture and services 51 courses for different departments at CAVS. The Department also offers masters and PhD programmes in Agronomy, Plant Breeding and Biotechnology, Crop Protection, Horticulture, Agricultural Resource Management and Seed Technology and Business Management.

The Department holds a premier position in the provision of quality teaching, research, outreach and consultancy services because of high quality and committed staff, adequate facilities and an established culture of high performance. We undertake rigorous training at both undergraduate and postgraduate levels. The department has in the recent past introduced Open, Distance and e-Learning (ODL) to cater for students whose work engagement may not allow them to be away from the workstation for prolonged periods. The ODL mode of delivery was initially piloted in 2010 with M.Sc. Crop Protection and has now become the mode of choice for most prospective students. The programme has now been expanded to include M.Sc. Horticulture, M.Sc. Agronomy, and M.Sc. Agricultural Resource Management. As a result, the number of postgraduate students has increased significantly. The Department has over 20 PhD students enrolled in its various academic programmes. Postgraduate students are drawn from the East African Community, Southern Africa and even North America, making our programmes truly international.

The Department has continued to remain competitive in research and development both locally and globally. It has strong linkages with national, regional and international research and education institutions. Most academic staff members are very active in seeking funds externally from donors by writing winning proposals. Researchers in the Department have developed new bean varieties that are rich in iron and zinc compared to ordinary bean varieties, as a strategy to deal with micronutrient malnutrition or hidden hunger. Research and development projects in cassava, banana, sorghum, maize, grain legumes, indigenous vegetables, mango, passion fruit, millet and snap bean have also been implemented jointly with stakeholders. It is worth noting that the Department has been a leader in the University in terms of protecting intellectual assets. To protect its intellectual property rights, the Department has developed partnerships with local seed companies to deliver the bean seed to the ultimate end users, the farmers.

The Department also undertakes consultancies and advisory services. It has carried out efficacy trials of agricultural chemical molecules for over 10 chemical companies in the country. These trials provide opportunities for internship for our recently graduated B.Sc. agriculture and horticulture students. The Department also carries out disease and pest diagnostics and assists farmers and other stakeholders to establish crop enterprises, particularly in the horticultural sector.

The Department hosts a centre of excellence in seed technology and business known as SEMIS – Seed Enterprise Management Institute. With its partners, it has offered and continues to offer short term courses in seed technology and business related areas for managers of seed companies in Sub-Saharan Africa with support from the Alliance of a Green Revolution in Africa (AGRA). The Institute has established a modern seed processing factory next to the Department office at the Field Station. This facility will be a key in training postgraduate students in seed processing.
Members of the Department are actively engaged in implementation of outreach activities among communities and organizations. In fact, almost every research project has an outreach component in which the researchers disseminate innovations to farmers and build capacities of different stakeholders. This is important for improving the uptake and adoption of research outputs. Many members of staff attend and present papers at high profile workshops and conferences organized at national, regional and global levels. The Department actively participates in national and regional research and educational exhibitions. Some of our academic staff and students have won awards in scientific forums held locally and globally. Besides, a number of our academic staff members have played major roles as members of boards, councils and committees of national, regional and global bodies.

The environment in which the Department operates is very dynamic. Consequently, the Department is confronted by new challenges and exposed to new opportunities. To overcome the challenges and exploit the opportunities, it has developed a strategic plan that will guide it in the next five years (2013 – 2018) towards achievement of its vision of a leading and vibrant centre of excellence for training, research, consultancy and outreach in Crop Sciences and Environmental Conservation. The department continues to build on its strengths in crop diagnostics, crop management, integrated pest management, quality seed development, molecular breeding and biometrics to improve its institutional competitiveness and image.
A summary of the current number of teaching staff in the Department

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>NO. IN POST</th>
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<tbody>
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<td>Professor</td>
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<tr>
<td>Associate Professor</td>
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<tr>
<td>Senior Lecturer</td>
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<td>Lecturer</td>
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<tr>
<td>Assistant Lecturer</td>
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<tr>
<td>Tutorial fellow</td>
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<tr>
<td><strong>OTHER</strong></td>
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<tr>
<td>Graduate Assistant</td>
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<tr>
<td>Part-time lecturer</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>34</strong></td>
</tr>
</tbody>
</table>

Postgraduate and Diploma Programs in the Department

<table>
<thead>
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<th>PROGRAM</th>
<th>Number of students Registered in 2012/2013</th>
<th>Number of students who graduated in 2012/2013</th>
</tr>
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<tbody>
<tr>
<td>1. MSc Crop Protection</td>
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</tr>
<tr>
<td>2. MSc Horticulture</td>
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<td>2</td>
</tr>
<tr>
<td>3. MSc Agronomy</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. MSc Plant Breeding &amp; Biotechnology</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. MSc Agricultural Resource Management</td>
<td>6</td>
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</tr>
<tr>
<td>6. MSc Plant Pathology</td>
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<tr>
<td>7. PhD Crop Protection</td>
<td>6</td>
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</tr>
<tr>
<td>8. PhD Horticulture</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>9. PhD Agronomy</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>10. PhD Genetics and Plant Breeding</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>11. Diploma in Crop Protection</td>
<td>15</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>72</strong></td>
<td><strong>33</strong></td>
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</tbody>
</table>
d). Students admission

Admission criteria are specified in the senate approved curricula. There is an upward trend in admission for MSc, Diploma and PhD programmes.

OUTREACH AND COMMUNITY SERVICE;

3. Shibairo, S. I. External examination at Maseno University, 12th to 18th August 2012.
4. Muthomi, J. W. External examination at Masinde Muliro University of Science and Technology, 2011 to date
5. Muthomi, J. W. External examination of postgraduate theses at University of Eldoret, 2013
7. Muthomi, J. W. External examination of postgraduate theses at Egerton University, 2012
8. Muthomi, J. W. External examination of postgraduate theses at Kenyatta University, 2012
9. Agricultural Sector Development Forum – Exhibition at Safari Park Hotel, 14th – 17th October 2012. (Dr. J. Kinama and Mr. D. Karanja)
11. On farm trial at Mwea by Dr. G. N. Chemining’wa, Prof. P. M. Kimani and J. Kamanu, November 2012.
13. Training SEUCO 2ndyear undergraduate students, on Familiarization with soil and crop science equipment and green house production practices, which included: Equipment to measure transpiration and quantity of light in crops, 24th May 2013. Maobe A. M. - Crop Science Section.
15. Training of farmers on harvesting and postharvest handling of African leafy vegetables (ALVs) held on 12th to 14th June 2013, in Kakamega, Western Province. Dr. C. Onyango.
16. Training of farmers on postharvest handling and processing of mangoes and bananas in Nkubu, Meru Country held from 16th to 22nd June 2013. Dr. C. Onyango.
18. Kimani P. M. Appointed a member of the National Varieties Release Committee with effect from 24th May 2012, by the Ministry of Agriculture through the Managing Director of KEPHIS.
19. Documentation of women knowledge, experiences attitudes, perceptions and practices in relation to food security and providing relevant professional advice to women groups in Baringo County. Food security project coordinated by the Women Study Centre. – 15th to 20th April 2013. Prof. F. Olubayo and Dr. M. Hutchinson.
20. Meeting with farmer groups to discuss on their agriculture and innovation histories and mapping out their agriculture communication pathways. It also involved assessment of the impact of their innovation activities on their incomes and livelihoods, and on the local economy.
22. Dr D. W. Miano. Training of Virus resistance cassava for Africa (VIRCA) Project staff on Regulatory compliance on Biosafety. Held on 18th December 2013 at KARI Alupe

RESEARCH ACTIVITIES

1. SEED ENTERPRISE MANAGEMENT INSTITUTE (SEMs) PROJECT AT CAVS

www.semis-africa.org

The Seed Enterprise Management Institute (SEMs) is a collaborative capacity building and food security initiative between the University of Nairobi, Alliance for a Green Revolution in Africa (AGRA), Iowa State University (ISU), International Maize and Wheat Improvement Centre (CIMMYT), Kenya Agricultural Research Institute (KARI), Kenya Plant Health Inspectorate Services (KEPHIS), private and public Institutions in the seed sector and independent consultants. SEMs was established in February, 2000 with the primary objective of providing capacity to the seed industry in sub-Saharan Africa.
SEMIs Management:

1.1 Professor Agnes Mwang’ombe is the SEMIs PI and the principal of the the College of Agriculture and Veterinary Sciences. She holds a BSc. Agriculture - University of Nairobi, MSc. Plant Pathology - University of Nairobi, and a PhD. degree and DIC in Plant Pathology - Imperial College.

Professor Florence Olubayo is an Agricultural Scientist and Associate Professor with emphasis in Integrated Crop Pest management, Post harvest pest management and Agricultural Technology transfer. She holds a PhD in Agricultural Entomology from the University of Newcastle Upon Tyne (UK), MSc in Agricultural Entomology and BSc in Agriculture from the University of Nairobi. She is a member of the SEMIs management team and a resource person in some of the training courses.

Professor Kiarie Njoroge holds a PhD in Plant Physiology and Breeding from Cambridge University (England), an MSc in Agricultural Botany from University of Wales (UK) and a BSc (biological sciences) from University of Nairobi (Kenya). He is a member of the SEMIs management team and a resource person in the training courses.

Dr. David K. Ndung’u is the project Manager of SEMIs involved in the day to day running of the project. Dr. Ndung’u is a plant breeder with a PhD degree in plant breeding from the University of KwaZulu Natal.

Other staff includes Florence Kiwunja, the office administrator, Rosebenna Cherono a field technician and, Francis Maina, Caroline Ndumi, and Basil Kirangu who assist in field operations.

Seed Courses offered at SEMIs
The main objective of SEMIs is to provide capacity to the seed industry in sub-Saharan Africa. SEMIs trains seed sector personnel from across sub-Saharan Africa on seed technology and business. Most of these seed sector personnel are staff from seed companies operating from across the continent, who are in need of short term training on seed issues right from production to marketing and distribution. Currently the project is concentrating on five very important seed courses:

1. Seed production:
   - The overall objective of the course is to enhance the participants’ practical knowledge and skills for quality seed production and regulatory aspects of seed production in a commercial context.

2. Seed drying, processing and storage:
   - The course is structured to equip the participants with practical knowledge of the basic concepts involved in drying, processing and storage operations typically utilized to prepare a seed lot for marketing and use.

3. Seed Business Management:
   - This course is designed to expose participants to knowledge of sound business practices which will enable them to build healthy and sustainable seed enterprises.

4. Seed Marketing:
   - The overall objective of the course is to enhance participants’ knowledge and skills on effective marketing approaches which will enable them to better serve and retain their existing customers and attract new ones.

5. Seed Quality assurance and Seed Enterprise Quality Management:
The overall objective is to enhance participants' practical knowledge and skills on seed testing, quality assurance and certification, and quality procedures that relate to overall quality of different departments within the seed company.

Over the four years that SEMIs has been operational, 528 seed practitioners from 17 sub-Saharan African countries, including, Uganda, Tanzania, Zambia, Malawi, Ethiopia, Mozambique, Nigeria, Niger, Ghana, Mali, Burkina Faso, Guinea, Sierra Leone, Liberia, Cameroon, South Sudan and Kenya, have received training on seed technology and business at SEMIs.

<table>
<thead>
<tr>
<th>Course</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>Total</th>
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<tr>
<td>Seed Production</td>
<td>29</td>
<td>27</td>
<td>30</td>
<td></td>
<td>86</td>
</tr>
<tr>
<td>Seed Drying Processing and Storage</td>
<td>31</td>
<td>28</td>
<td>31</td>
<td></td>
<td>90</td>
</tr>
<tr>
<td>Seed Business Management</td>
<td>29</td>
<td>26</td>
<td>29</td>
<td>25</td>
<td>109</td>
</tr>
<tr>
<td>Seed Marketing</td>
<td>28</td>
<td>25</td>
<td>30</td>
<td>27</td>
<td>110</td>
</tr>
<tr>
<td>Seed Quality Assurance</td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>Seed Legislation and Accreditation</td>
<td>25</td>
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<td></td>
<td></td>
<td>25</td>
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<tr>
<td>Seed Quality Assurance and Seed Enterprise</td>
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<td>55</td>
</tr>
<tr>
<td>Quality Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total( Yearly)</td>
<td>172</td>
<td>132</td>
<td>149</td>
<td>52</td>
<td>505</td>
</tr>
</tbody>
</table>

The technical knowledge acquired at SEMIs by these seed company personnel is translating into increased seed volumes and enhanced quality of seed resulting in increased food production and poverty alleviation within the continent. SEMIs is also enhancing linkages between individual seed companies, and seed companies and public and private institutions for improved business.
SEMIs seed practitioners in a lab session at CAVS

SEMIs participants visiting an Agro-dealer shop to familiarize with movement of seed in the seed value chain.

SEMIs concentrates a lot on experiential training-SEMs participants on a visit to the Njoro wheat breeding facility

SEMIs participants on visit to Dryland Seed company in Machakos Kenya

The SEMIs instructors and facilitators are drawn from the University of Nairobi, KEPHIS, KARI, Iowa State University, CIMMYT, seed companies and other public and private institutions engaged in the seed value chain.

**BEAN PROJECT AT SEMIs**

Apart from training seed practitioners SEMIs is also involved in bean Seed production at CAVS. One of the major challenges for food security is availability of foundation seed that is required by seed companies for seed bulking and production of certified seed. SEMIs is producing Breeder seed of high yielding bean varieties developed and bred at UON and in the process helping seed companies upscale seed production and ensuring the benefits of research in the form of new varieties developed are accessible to the end user who is the small scale farmer.
SEMIs Infrastructure Development at CAVS

In order to maximize benefits of seed for the small-scale farmer, SEMIs is also developing infrastructure for certified seed production. The SEMIs seed processing unit constructed at the field station (CAVS) will have a production capacity of over 5 metric tons of seed per hour upon completion. This unit will be used for processing of certified high quality seed for UNISEED, the university of Nairobi seed company. It will also be available for processing of seed from seed companies that do not have processing facilities.

The seed processing factory constructed at the field station is complete and soon a seed processing line will be installed in the facility

On completion of the seed processing facilities, SEMIs will also construct a modern seed laboratory at the field station which will complement the seed processing unit. The seed laboratory is envisaged to be one of the Kenya Plant Health Inspectorate Service (KEPHIS) accredited seed laboratories that will in the near future be rolled out. These accredited seed laboratories will perform seed quality assurance on behalf of the regulator, KEPHIS in order to hasten the process of seed quality control and ensure that farmers can quickly access high quality seed for improved yields and poverty alleviation.

Disseminating Seed information

To bridge the gap on seed information, the project has a website www.semis-africa.org that is a one-stop shop for seed-related information. SEMIs staff also actively participate in agricultural conferences, meetings and workshops both within and without the African region.

SEMIs was represented at the Agricultural Sector development Forum (2012) which was graced by H.E. President Mwai Kibaki of Kenya

H.E. Mohamed Shein, president of Zanzibar visits the SEMIs stand at the African Seed trade Association (AFSTA) congress in Zanzibar in February 2012.


4. Improving incomes for smallholder farmers and other value chain actors through enhanced productivity, post harvest handling technologies, value addition and marketing of mango and passion fruit products. Funded by Kenya Agricultural Productivity and Agribusiness Program (KAPAP). Investigators: Dr. J. Ambuko, Mr. J. Njungu, Dr. M. Mwangi, P. Mbogo, L. Wekesa, F. M. Kilu, Dr. W. Owino, P. Mwangi Collaborators University of Nairobi, KARI, Kenyatta University, Kamurugu/RIDA, KEFRI, Kamumo Products, JKUAT, KENFAP. (2011-2014)


9. Enhancing sorghum sorghum, processing and marketing for improved small-holder incomes and livelihoods in Kenya. Funded by (KAPP) Investigators: Dr. Erick Cheruiyot, Dr. E. Ngugi, Prof. G. Ouma, Mr. M. Kaibui, Dr. J. Mutysia, Dr. J. Mukhwana, Dr. I. Agina, Dr. J. Mutunga, Mr. L. Maina. University of Nairobi, Egerton University, Bond University, JKUAT, SACRED Africa, KARI, Spectra International –Kisumu, East African Breweries. (2011-2013)


11. Value added bean technologies for enhancing food security, nutrition, income and resilience to cope with climate change and variability challenges in Eastern Africa. Funded by Bioresources Innovation Network for Eastern Africa Development (Bio-Innovate). Investigators: Prof. P. M. Kimani/Mr. D. Karanja.Collaborators: University of Nairobi, KARI, ISABU (Burundi), Trufoods (K) Ltd, PABRA (Uganda), SARI (TZ), Sokeone University of Agriculture (TZ) ISIAM (Rwanda)& EAIR (Ethiopia). (2011-2013).


15. Contribution of Cleome gynandra (cat’s whiskers) to food, nutrition and income for rural populations. Funded by UoN Deans Committee grant. Investigators: Dr. Cecilia M. Onyango, Dr. R. Narla, Dr. Catherine N. Kunyanga (2011-2013).

28. Improving profitability of the mango value chain through strategies for off-season flower induction, proper harvest scheduling and appropriate postharvest handling practices and technologies. Funded by RUFORUM Investigators: Dr. J. Ambuko Prof. S. Shibairo Dr. M. Hutchinson. Collaborators: JKUAT, University of Nairobi (2012-2014).
31. Promotion of Snap Bean Integrated Crop Management Technologies for Improved Livelihoods in Eastern & Central Africa. Funded by ASARECA. Investigator: Dr. G. Cheminingwa University of Nairobi, National Crops Resources Research Institute (NaCRRRI), Selian Agricultural Research Institute (SARI) and Mt Kenya University. (Dec 2012-Oct 2013).
32. Validation of Multiple disease Resistant Snap Bean Varieties for Local and Export Markets. Funded by ASARECA. Investigators: Prof. P. M. Kimani, Dr. R. Narta. Collaborators National Crops Resources Institute (Uganda), Rwanda Agricultural Board (Rwanda), Kenya Plant Health Inspectorate Services and University of Nairobi, (Dec 2012-Oct 2013).
33. Innovation systems, agricultural growth and rural livelihoods in East Africa, Funded by DFID-ESRC Growth Programme. Investigators: Prof. Chris Garforth, Dr. Peter Dorward and Dr. Sarah Cardey (University of Reading-leading team) Prof. Florence Olubayo and Dr. Rose Nyikal (University of Nairobi collaborators). Collaborators: Makerere University (Uganda), Ahfad University for Women (Sudan) and University of Kiel (Germany). (June 2012-July 2014).
34. Post-harvest Management Training Project. Investigators: University of Sydney, Prof. Florence Olubayo (Coordinator-University of Nairobi). Collaborators; University of Stellenbosch (South Africa) and Kwame Nkrumah University of Science and Technology (Ghana) Prof. Robyn McConchie (PI). (June 2012-December 2013).
40. Minimizing Postharvest Losses among Mango Farmers through Training on Good Harvest and Postharvest Handling Practices. Trellis Fund Student Capacity Building Project supported by Horticulture CRSP and USAID. University of Nairobi in collaboration with University of California, UC Davis, USA (2013-2014). Jane Ambuko (PI), Dr. Margaret Hutchinson and Msc Horticulture Students (Nancy Kemunto, Lilian Ouma and Penina Yumba).
41. Genetic Characterization of Eastern and Southern African Cleome gynandra (Spider Plant) species for nutritional and health promoting bioactive compounds. Co-funded by Kenya Government through National Council for Science and
Technology (NCST) and South African Government through National Research Foundation (NRF) – (2013 – 2014). Dr. Jane Ambuko (Kenyan PI, UON) and Dr. Bridget Crompton (South African PI, University of Pretoria)
42. Improving profitability of the mango value chain through strategies for off-season flower induction, proper harvest scheduling and appropriate postharvest handling practises and technologies. Funded by Regional Universities Forum (RUFORUM) – (2012-2014). Jane Ambuko (PI), Dr. Margaret Hutchinson, Prof. Solomon Shibairo, Dr. Willis Owino (JKUAT) and Mr. Joseph Njuguna (KARI)
43. Improving incomes for smallholder farmers and other value chain actors through enhanced productivity, post harvest handling technologies, value addition and marketing of mango and passion fruit products. Funded by the Kenya Government through the Kenya Agricultural Productivity and Agribusiness Project (KAPAP). Mr. Joseph Njuguna (PI – KARI ), Dr. Jane Ambuko (UON Partner), Dr. Willis Owino (JKUAT Partner), Dr. Maina Mwangi (KU Partner), Private Sector Processors
45. Supporting investments in up scaling of grain legumes in western Kenya through assessing and modeling the threat of biotic stressors*. Funded by the McKnight Foundation. Dr. Mathew Abang (CIAT), Dr. J. W. Muthomi, Dr. Ogecha (KARI), Dr. Hassan Were (Masiinde Muliro University of Science and Technology), Dr. J. M. Wagacha, MacDonald Wesonga (ARDAP), September 2012 to February 2014.
46. Integrated management of Banana Xanthomonas Wilt (Xanthomonas campetris pv. musacearum) in Kenya through cultural and host resistance. Funded by the National Council for Science and Technology (NCST) for PhD training of Mr. Johnson K. Kwach. October 2011 to September 2014.

COLLABORATIONS WITH OTHER INSTITUTIONS
- University of Nairobi, Department of Plant Science and Crop Protection and University of Stellenbosch(South Africa) and Kwanza Nkumah University of Science and Technology (Ghana)
- University of Nairobi, Department of Plant Science and Makerere University(Uganda), Ahfad University for Women (Sudan) and University of Kiel (Germany)
- University of Nairobi and ), Kenya Plant Health Inspectorate Services (KEPHIS)
- University of Nairobi and Kenya Agricultural Research Institutions (KARI)
- University of Nairobi, RUFORUM, IFS, Bioversity International, African Network for Agriculture, IRDCAM-(Benin), PGPRRI (Ghana), University of Malawi
- University of Nairobi, KARI, Egerton University, Cornell University, Food Supply Organization (REFSO)
- University of Nairobi, KARI, Kenyatta University, Kamurugu/RIDA, KEFRI, Kamumo Products, JKUAT, KENFAP

Publications in Referred Journals


Papers Presented at Workshops/Conferences

(a) Annual JEPAK Conference at Panafic Hotel, Nairobi, 22nd November 2012.
Raterno W. Michieka, The boy child vs the girl child: is the reality dawning

(b) All Africa Horticultural Congress (AAHC), Skukuza, South Africa 15-20th January, 2012.

(c) International Conference on Youth in Africa. Book of Abstracts Page 8.


5. S. Munialo, L.S.M. Akundabwenti.: Investigating viability of Premium Influenced Land Use Structure in production of quality indigenous vegetable

6. Ambuko, Jane, Willis Owino, Solomon Shibairo, Margaret Hutchinson and Joseph Kori Njuguna.2012. Improving profitability of the Mango Value chain through Strategies for off-season flower induction, reliable maturity indices and applicable postharvest handling technologies. Project Poster presented at the 3rd RUFORUM Biennial Regional Conference. Imperial Resort Beach Hotel- Entebbe, Uganda.. WON BEST POSTER AWARD.


10. F. K. Tom, J. W. Muthomi, F. M. Olubayo and G. N. Chemining'wa. 2012. Susceptibility of locally grown maize varieties to infestation by maize weevil (Sitophilus zeamais Motsch)


(f) HAK Workshop on sustainable horticultural production in the tropics, Bondo University College (BUC), Kisumu, 4th to 7th December 2012.


20. Wachira P.M., Kimenju J.W., Kiariie J.W. and Mwaniki S.W., Diversity of nematode destroying fungi in banana based farming systems in Maragua, Kenya.


23. Kemunto O.N., Ambuko J., Hutchinson M.J. and Owino W.O. Effect of concentrations of 1-methylcyclopropene on the postharvest characteristics of “apple” mango (Mangifera indica L.) fruits harvested at different maturity stages.


(g) Abstract submitted to BGRI technical workshop at Beijing, China


WORKSHOPS AND CONFERENCES

4. Olubayo, F. O. Participated as judge at the 1st National Science and Technology and innovation week, at KICC, Nairobi 7th –11th May 2012.
5. Olubayo, F. O. Participated as judge at the African forum on Science, Technology and innovation for youth empowerment, human capital development and inclusive growth. 30th April to 2nd May 2012.
6. Miano, D. W., SCIFODE meeting, Kampala, Uganda, 18th to 21st July 2012.
7. Olubayo, F. O. Workshop to review the innovation grant applications under the National Council for Science and Technology at KCB, Karen, 16th –17th August 2012.
8. Olubayo, F. O. Workshop to review the women scientists research grant applications under the National Council for Science and Technology at Utali Hotel, 11th to 14th September 2012.
13. Akundabweni, L.S., Workshop to present the draft final pre-feasibility report on irrigation development and watershed management in the Lake Victoria Basin, Mwanza, Tanzania, 11th to 12th October 2012.
16. Miano, D.W., VIRCA-II Steering Committee meeting, Donald Danforth Plant Science Centre in St. Louis, Missouri, USA, 20th to 30th October 2012.
23. Chemining’wa, G. N., Stakeholder curriculum review workshop Egerton University.
24. Ambuko, J. W. (with the followwind students Ouma L., Kemunto N. O, Yumba Y.) HAK Workshop on sustainable horticultural production in the tropics, Bondo University College (BUC), Kisumu, 4th to 7th December 2012.
30. Ambuko, J. L., Stakeholder Workshop on the Code of Conduct and Ethics for Agricultural Professionals at KARI (Mtwapa) in Mombasa, 6th January to 9th January 2013
33. Onyango, C.M. Transformative Education, Research and Engagement for Dryland and Sustainability-Preparation the next generation
34. Miano, D.W. VIRCA-II Steering Committee Meeting, Donald Danforth Plant Science Center, St. Louis, MO, 24th-25th October, 2012.
35. Muthomi, J. W. The 2012 Borlaug Dialogue World Food Prize International symposium, 16th -19th October 2012, Des Moines, Iowa, USA.
36. Muthomi, J. W. 4th Annual Regional Conference for the East & Horn of Africa Community of Practice (E/HAfCoP), April 30 - May 4, 2012 in Kampala, Uganda
37. Muthomi, J. W. Sanitary and phytosanitary systems and agricultural education training, 15th August to 6th December 2012 at the University of Missouri-Columbia, USA. Course funded and organized by the Foreign Agricultural Service of the United States Department of Agriculture.
38. Muthomi, J. W. Professionalism and Ethics in agricultural sciences, 20th August to 6th December 2012, University of Missouri-Columbia, USA.
39. Muthomi, J. W. Sanitary-phytosanitary and pest risk analysis training, 26th November to 1st December 2012 at the Centre for Regulatory Research LLC, USA.
40. Muthomi, J. W. Mycotoxins in foods, 7th September to 4th December 2012 at the University of Missouri-Columbia, USA.
41. Muthomi, J. W. Curriculum development, 28th September to 2nd December 2012 at the Centre for Collaboration and Development of Educational Innovations, University of Missouri-Columbia, USA
42. Muthomi, J. W. The 2012 Borlaug Dialogue World Food Prize International symposium, 16th -19th October 2012, Des Moines, Iowa, USA.
43. Muthomi, J. W. 4th Annual Regional Conference for the East & Horn of Africa Community of Practice (E/HAfCoP), April 30 - May 4, 2012 in Kampala, Uganda
44. Muthomi, J. W. Sanitary and phytosanitary systems and agricultural education training, 15th August to 6th December 2012 at the University of Missouri-Columbia, USA. Course funded and organized by the Foreign Agricultural Service of the United States Department of Agriculture.
45. Muthomi, J. W. Professionalism and Ethics in agricultural sciences, 20th August to 6th December 2012, University of Missouri-Columbia, USA.
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47. Muthomi, J. W. Mycotoxins in foods, 7th September to 4th December 2012 at the University of Missouri-Columbia, USA.
48. Muthomi, J. W. Curriculum development, 28th September to 2nd December 2012 at the Centre for Collaboration and Development of Educational Innovations, University of Missouri-Columbia, USA
49. Onyango, C.M. Write-up workshop for development of full ASARECA proposal for the staple crops project on validation of new disease resistant snap beans lines for adaptability, 29th October to 2nd November 2012., Mukono, Uganda.
52. Kimani P.M. Automated Monitoring Evaluation and Reporting (MER) System Workshop, in Entebbe, Uganda from 1st to 3rd April, 2013.
53. Kimani, P.M. ISSD International Workshop in Kumasi, Ghana, from 8th to 10th April, 2013.

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58. Onyango, C.M. Transformative Education, Research and Engagement for Dryland Resilience and Sustainability-Preparring the next generation for sustainability. 1st student led Conference, 29th to 30th May 2013. University of Nairobi, College of Agriculture and Veterinary Sciences, Nairobi, Kenya.


60. Hutchinson, M., Follow-up meeting with ASARECA Trainees in Ethiopia. 23rd to 29th June 2013

61. Miano, D. VIRCA Project Biosafety Regulatory meeting. Protea Hotel, Kampala, Uganda. 27th June 2013.


Postgraduate Students graduation: Students who graduated in 2012-

### MSc Crop Protection

<table>
<thead>
<tr>
<th>Name</th>
<th>Registration no</th>
<th>Title of Thesis</th>
<th>Supervisors</th>
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<tbody>
<tr>
<td>1  Ita Boniface Nyaga</td>
<td>A56/76332/2009</td>
<td>Assessing the effectiveness and benefits of conventional and minimum tillage on weed management in Maize (Zea mays L.)</td>
<td>Prof. R. Michieka, Dr. E. Ariga, Dr. M. Muiru</td>
</tr>
<tr>
<td>3  Were S. Aringo</td>
<td>A56/76912/2009</td>
<td>Occurrence of Potato Tuber Moth (Spp. Operculillla) and screening for tolerance in popularly grown varieties in Kenya</td>
<td>Prof. F. Olubayo, Prof. J. Nderitu, Dr. D. Kabita, Mrs. D. Kilalo</td>
</tr>
<tr>
<td>4  Weru Rose Wamaitha</td>
<td>A56/72737/2008</td>
<td>Tolerance of maize varieties to infection by aspergillus flavus and its management by use of antagonistic microorganisms</td>
<td>Dr. J. Muthomi, Dr. G. Chemining’wa, Prof. E. Mutitu</td>
</tr>
<tr>
<td>5  Ngure Kimani</td>
<td>A56/P/8501/2003</td>
<td>The occurrence and integrated management of cassava brown streak disease in coastal Kenya</td>
<td>Prof. D. Mukunya, Dr. R. Muinga</td>
</tr>
<tr>
<td>6  Nzesya Jane K. Maundu</td>
<td>A56/1042/2009</td>
<td>Plant Parasitic Associated With Coffee In Kenya, Germplasm Response And Effect Of Nutrition On Tolerance To Nematode Damage”</td>
<td>Prof. J. Kimenju, Dr. M. Muiru, Dr. E. Gichuru</td>
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### MSc Agricultural Resource Management

<table>
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<th>Name</th>
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<th>Supervisors</th>
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<tr>
<td>7  Kamanu J. Karuki</td>
<td>A56/76185/2009</td>
<td>Effect of Inorganic fertilizer application regimes and rhizobium inoculation on growth, yield and quality of snap bean (Phaseolus vulgaris L.) varieties in Central Kenya.</td>
<td>Dr. G.Chemining’wa, Prof. J. Nderitu, Dr. J. Ambuko</td>
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### MSc Plant Breeding and Biotechnology
<table>
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<tr>
<th>#</th>
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<tr>
<td>8</td>
<td>Kimani Wilson</td>
<td>A56/72263/2008</td>
<td>MSc Plant Breeding and Biotechnology</td>
<td>Transferring drought tolerance of the stay-green trait in sorghum from E36-1 an Ethiopian line into ochutu, a farmer preferred Kenyan variety</td>
<td>Dr. Ngugi Prof. E. Mutitu Dr. D. Kiambi</td>
</tr>
<tr>
<td>9</td>
<td>Kaloki Peter Kiko</td>
<td>A56/72086/2008</td>
<td>MSc Plant Breeding and Biotechnology</td>
<td>Genetic variability and heritability of chickpea (Ciceraretinum L.)</td>
<td>Dr. E. Ngugi Dr. S. Silim Dr. M. Mburu</td>
</tr>
<tr>
<td>10</td>
<td>Bigirimana Joseph</td>
<td>A56/77624/2009</td>
<td>MSc Plant Breeding and Biotechnology</td>
<td>Characterization of resistance to coffee leaf rust and coffee berry disease among Rwandese and associated coffee germplasm</td>
<td>Dr. K. Njoroge Dr. J. Muthomi Dr. D. Gahakwa Dr. Noah A. Phiri Dr. E.K. Gichuru</td>
</tr>
<tr>
<td>11</td>
<td>Niyibigira Theogene</td>
<td>A56/7890/2009</td>
<td>MSc Plant Breeding and Biotechnology</td>
<td>Transferring of Striga Resistance QTLs from a Resistant Donor Source into Adapted Sorghum variety in Rwandan adapted sorghum variety</td>
<td>Dr. Ngugi Prof. E. Mutitu Dr. D. Kiambi</td>
</tr>
<tr>
<td>12</td>
<td>Githiga W. Ruth</td>
<td>A56/77181/2009</td>
<td>MSc Horticulture</td>
<td>Effect of 1-Methylcyclopropene and Activebag® Packaging on the Postharvest characteristics of fruits</td>
<td>Dr. J. L. Ambuko Dr. M. J. Hutchinson Dr. W. O. Owino</td>
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<tr>
<td>13</td>
<td>Yumba P. Mueni</td>
<td>A56/64875/2010</td>
<td>MSc Horticulture</td>
<td>Agro-ecological conditions affecting the postharvest quality of passion fruits and their response to postharvest treatment.</td>
<td>Dr. J. Ambuko Prof. S. Shibairo Dr. W. Owino</td>
</tr>
<tr>
<td>14</td>
<td>Kigamwa Joseph Ngilu</td>
<td>A56/7356/1994</td>
<td>MSc Plant Pathology</td>
<td>Cultural studies and assessment of seedborne inoculums of Phyricularia grisea (anamorph Magnaporthe grisea) on and in finger millet seed and its implication on blast incidence and severity.</td>
<td>Prof. A. Mwang’ombe Prof. Mibey</td>
</tr>
<tr>
<td>15</td>
<td>Samuel Wanjohi Wahome</td>
<td>A56/77181/2009</td>
<td>MSc Plant Breeding</td>
<td>Selection for multiple disease resistance and marketable pod characteristics in snap bean genotypes</td>
<td>Prof. P. M. Kimani Dr. J. W. Muthomi Dr. R.D. Narla</td>
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<tr>
<td></td>
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<td>PhD</td>
<td>Identification and Characterization of New Sources of Resistance to Striga Hermonthica among diverse maize germplasm.</td>
<td>Dr. K. Njoroge Dr. S. Ariga Prof. J. Nderitu</td>
</tr>
<tr>
<td>2</td>
<td>Kilao C. Dora</td>
<td>A80/80464/2010</td>
<td>PhD Entomology</td>
<td>Molecular Detection of Viruses Associated with Passion Fruit (Passiflora edulis) woodiness disease, Monitoring and Management of Aphid Vectors in Kenya.</td>
<td>Prof. F. Olubayo Prof. J. Kimenju Dr. M. Hutchinson Dr. E. Ateka</td>
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EXTERNAL EXAMINERS 2011/2012

Faculty of Agriculture: EXTERNAL EXAMINERS

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<thead>
<tr>
<th>EXTERNAL EXAMINER</th>
<th>DEPARTMENT</th>
<th>INSTITUTION</th>
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<tr>
<td>1</td>
<td>Prof. Stephen M. Githiri</td>
<td>Plant Science and Crop Protection</td>
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<tr>
<td>2</td>
<td>Dr. Isaiah M. Tabu</td>
<td>Plant Science and Crop Protection</td>
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<td>3</td>
<td>Dr. Gohole Linnet Serenge</td>
<td>Plant Science and Crop Protection</td>
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<tr>
<td>4</td>
<td>Prof. Ezekiel Kiprop</td>
<td>Plant Science and Crop Protection</td>
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<tr>
<td>5</td>
<td>Dr. Edward Gachangi Njenga</td>
<td>Plant Science and Crop Protection</td>
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</tbody>
</table>

Teaching and Research facilities acquired within the reporting period

1. 4 Laptops for MSc Students-RUFORUM projects
2. 1 Fridge
3. 1 Freezer

Department of Land Resource Management and Agricultural Technology (LARMAT)
The Department of Land Resource Management and Agricultural Technology (LARMAT) through training, research and community service, aims at enhancing sustainable natural resource management and development of technologies suitable for sustainable livelihoods, and informing policy. The department offers both undergraduate and postgraduate programmes in soil, water, range, agroforestry and environmental management. The department also offers consultancy and advisory services in soil survey, soil fertility and water management, land use planning, and bio-fertilizer production among others. The Department hosts the Center for sustainable Dryland Ecosystems and Societies (CSDES) and the regional Micro-Biology Resource Centre (MIRCEN) that offers training in biological nitrogen fixation and inoculant production. In addition, LARMAT has the mandate to manage Kibwezi, Machang’a and Ngong field stations, which have great potential for irrigated agriculture, bee keeping and livestock production.

1. LIST OF ACADEMIC PROGRAMMES

Undergraduate Programmes
- BSc. Management of Agro-ecosystems & Environment
- BSc. Range Management
- BSc. Agriculture (Soil Science Major)

Postgraduate Programmes
- MSc. Range Management
- MSc. Soil Science
- MSc. Land and Water Management
- MSc. Sustainable Soil Resource Management
- MSc. Agroecosystems and Environment
- MSc. Agroforestry
- PhD in all the above MSc programmes
- PhD. Dryland Resource Management

2. STUDENTS ADMITTED INTO EACH ACADEMIC PROGRAMME IN 2012/2013

<table>
<thead>
<tr>
<th>Programme</th>
<th>No. Admitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 BSc. Range Management</td>
<td>40</td>
</tr>
<tr>
<td>2 BSc. Mgt. of Agro-ecosystems &amp; Environment</td>
<td>35</td>
</tr>
<tr>
<td>Degree Program</td>
<td>Participants</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>BSc. Agriculture (Soil Science Major)</td>
<td>10</td>
</tr>
<tr>
<td>MSc. Sustainable Soil Resource Management</td>
<td>6</td>
</tr>
<tr>
<td>MSc. Range Management</td>
<td>4</td>
</tr>
<tr>
<td>MSc. Soil Science</td>
<td>1</td>
</tr>
<tr>
<td>MSc. Land &amp; Water Management</td>
<td>4</td>
</tr>
<tr>
<td>MSc. Agroecosystems and Environment</td>
<td>1</td>
</tr>
<tr>
<td>MSc. Agroforestry</td>
<td>1</td>
</tr>
<tr>
<td>PhD. Dryland Resource Management</td>
<td>8</td>
</tr>
<tr>
<td>PhD. Soil Science</td>
<td>1</td>
</tr>
<tr>
<td>PhD. Range Management</td>
<td>1</td>
</tr>
<tr>
<td>PhD. Sustainable Soil Resource Management</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>113</strong></td>
</tr>
</tbody>
</table>

Participants of AGRA-funded Capacity Building in Sustainable Soil Resource Management regional MSc training stakeholders workshop held in Nairobi in 2012.

**Students Extol the Internship Program**

Ten students successfully completed their three months internship program at various organizations where the Centre for Sustainable Dryland Ecosystems and Societies (CSDES) posted them. During an internship evaluation seminar held at
CSDES offices, speaker after speaker praised the program noting that it had significantly made a difference in their academic lives and in understanding dryland management issues. “I have gained experience in the understanding and management of outreach for dryland ecosystems,” said Mosiany Peter an intern attached at Dupoto e Maa. The three month internship program given by CSDES aims at transforming higher education in the Drylands of Kenya. Young graduates are sent as far as Loita, Garissa, Mbeere, Laikipia, Kajiado/Kitengela, Turkana, Taita-Taveta, Tana-River/Isiolo, Kiboko, and Mara.

3. NUMBER OF STUDENTS WHO GRADUATED FROM EACH PROGRAMME IN 2012/2013

<table>
<thead>
<tr>
<th>Programme</th>
<th>No. Graduated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. BSc. Range Management</td>
<td>9</td>
</tr>
<tr>
<td>2. BSc. Mgt. of Agro-ecosystems &amp; Environment</td>
<td>29</td>
</tr>
<tr>
<td>3. BSc. Agriculture (Soil Science Major)</td>
<td>4</td>
</tr>
<tr>
<td>4. MSc. Range Management</td>
<td>2</td>
</tr>
<tr>
<td>5. MSc. Soil Science</td>
<td>1</td>
</tr>
<tr>
<td>6. MSc. Sustainable Soil Resource Management</td>
<td>9</td>
</tr>
<tr>
<td>7. MSc. Land &amp; Water Management</td>
<td>2</td>
</tr>
<tr>
<td>8. PhD. Dryland Resource Management</td>
<td>2</td>
</tr>
<tr>
<td>9. PhD. Mgt. of Agro-ecosystems &amp; Environment</td>
<td>1</td>
</tr>
<tr>
<td>10. PhD. Range Management</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>63</strong></td>
</tr>
</tbody>
</table>

4. EXTERNAL EXAMINERS - 2012/2013

- Prof. Isaac Kirea Kigatiira  
  P.O. BOX 56861  
  Department of Dryland Natural Resource Management  
  NAIROBI-KENYA

- Prof. Peter Alfred Kamau  
  Agric. and Natural Resources  
  Kenya Methodist University  
  P.O. BOX 45240-00100  
  NAIROBI-KENYA

- Dr. Nancy Wangari Mungai  
  Dept. of Crops, Horticulture and Soils  
  Egerton University  
  P.O. BOX 536  
  NJORO-KENYA

5. RESEARCH ACTIVITIESIN THE DEPARTMENT

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Principle Investigator</th>
<th>Research Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Dr R. N. Onwonga</td>
<td>Access agriculture (2014) - Videos for farmers’ Project - Video-mediated learning in Agriculture (6 months)</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Prof. C.K.K. Gachene (second from right) visiting a conservation tillage field experiment site in Makueni County with KARI scientists. Over the years the Department of LARMAT has put emphasis in collaboration with other institutions to carry out research.

6. PUBLICATIONS


7. PARTICIPATION IN CONFERENCES

Dr. G. Kironchi

Dr. L. MacOpiyo
- International Conference on Climate Change Impacts and Adaptation for Food and Environmental Security,21-22 Nov. 2012. Held at Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), UPLB Campus, College, Los Baños, Laguna, Philippines. Presentation: “A System for Monitoring the Effects of Climate on the Flux and Availability of Water Resources in the Drylands of Eastern Africa”.

Dr G.N. Karuku
- The 27th Soil Science Society of East Africa and the 6th Africa Soil Science Society Conference at Hotel Cathy, Nakuru County, Kenya October, 21-25, 2013. Theme: Transforming Rural Livelihoods in Africa: How can land and water management contribute to enhanced food security and address climate change adaptation and mitigation?

Prof. S. Keya
- KARI Annual Research Conference held in Nairobi January 2013 and presented a paper on Essential Elements towards the preparation for an External Programme and Management Review of research.

Dr. Judith Mbau

• Participated in the Tropentag International Conference held September 2012. – Germany.
• Participated in the Student-led conference held at UON – Kabete campus June 2013. Presented a paper on: Linking local communities to land use and land cover changes and their implications for human-wildlife conflicts using PGIS.

Dr. Stephen Mureithi

• 1st Student-Led Conference organised by the Centre for Sustainable Drylands and Societies (CSDES), University of Nairobi. 29- 30th May, 2013, Nairobi.

Dr. Richard Onwonga

• 8th International Conference and Expo 2014 on 26th-28th March 2014

8. PARTICIPATION IN WORKSHOPS

Dr. G. Kironchi


Dr Stephen Mureithi

• 8th International Soil Science Congress on "Land Degradation and Challenges in Sustainable Soil Management” 15-17th May 2012, Çeşme-Izmir-TURKEY.
• Triple L - Land, Livestock and Livelihood Dynamics in Dryland Systems. 18-20th Nov. 2013. Kitale, KENYA.

Dr Judith Mbau

• Presented in a workshop held in Taveta District Kenya 2013: Integrating local communities into the management of human-wildlife conflicts. The case of Taveta District, Southern Kenya. Presentations papers: (1) Local Community participation in Human-wildlife conflict management; (2) The potential of ecotourism in Human-Wildlife conflict management.

9. SCIENTIFIC VISITS/TRAININGS

Dr. G. Kironchi

• Results-Based Management (RBM), organized by ANAFE, University of Abdou Moumouni of Niamey, Niger, November 29-December 1, 2012.
• Development of Instructional Content for Open and Distance Learning, organized by the Centre for Open and Distance Learning (CODL), University of Nairobi at KWSTI Naivasha, August 5-11, 2012.

Dr MacOpiyo
• Instructed at the GrassNet Summerschool held between September 24-28,2012 in Witzenhausen, Germany entitled "Modeling approaches to support grassland management"
  Gave the following seminars:
  ✓ Modeling fodder supply by use of spatial data and satellite–based weather monitoring system data.
  ✓ Modeling the effects of changes in decision making using multi agent models
• Instructed at the “Sustainable Agricultural and Rural Development for Food Security” summer school at SEARCA, Los Baños, Laguna, Philippines between 11th-15th November 2013
  Presented a weeklong seminar on Population, Food, and Governance Issues

Dr. G. N. Karuku
• Introduction to the use of Nuclear and isotopic techniques in soil, water and nutrient management; at the International Atomic Energy Agency in Vienne International Center, Vienna-Austria from May 12-18, 2013.

Dr Judith Mbau
• Summer School held September 24-28,2012 in Witzenhausen, Germany; presented paper entitled "Modeling approaches to support grassland management" University of Kassel, Germany.

10. THESIS – TITLE & AUTHOR

MSc Theses

<table>
<thead>
<tr>
<th>S.No</th>
<th>Programme</th>
<th>Title</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>MSc. Soil Science</td>
<td>Effectiveness of Rhizobia Isolates from Kenyan Soils and Commercial Inoculants in Nodulation of Soybeans</td>
<td>Waswa N. Maureen</td>
</tr>
<tr>
<td>2</td>
<td>MSc. Land &amp; Water Management</td>
<td>Effect of Compliance with Food Safety Standards for Production of French Beans on Soil Fertility in Smallholder Farms in Kirinyaga County</td>
<td>Mnyambo G. Clarice</td>
</tr>
<tr>
<td>3</td>
<td>MSc. Land &amp; Water Management</td>
<td>Effects of Supplemental Irrigation on Growth and Yield of Onions (Allium cepa) and Tomatoes (Solanum lycopersicum) in Semi-arid Eastern Kenya</td>
<td>Origa O. Linus</td>
</tr>
<tr>
<td>4</td>
<td>MSc. Range Management</td>
<td>A Comparative Study of the Productivity of Brachiara Hybrid CV. Mulato 11 and Native Pasture Species in Semi-Arid Rangelands of Kenya</td>
<td>Machogu Clara</td>
</tr>
<tr>
<td>5</td>
<td>MSc. Range Management</td>
<td>Pastoral Community Learning on Natural Resource Conservation and Governance: A case of Il Ngwesi Conservancy in Laikipia County Kenya</td>
<td>Komu Henry Mwaka</td>
</tr>
<tr>
<td>6</td>
<td>MSc. Sustainable Soil Resource Management</td>
<td>Assessment of Quality Control of Inoculants on Bean and Soybean in Eastern and Central Africa</td>
<td>Mwanga Balume Kayani</td>
</tr>
</tbody>
</table>
### PhD Theses

<table>
<thead>
<tr>
<th>Program</th>
<th>Title</th>
<th>Author</th>
</tr>
</thead>
<tbody>
<tr>
<td>1    PhD (DRM)</td>
<td>An Analysis of Human-Wildlife Conflicts in the Tsavo West – Amboseli Agro-Ecosystem Using Integrated Geospatial Approaches: The Case Study of Taveta District</td>
<td>Mbau Judith Syombua</td>
</tr>
<tr>
<td>2    PhD (DRM)</td>
<td>Climate Variability and Adaptation in Agro-Pastoral Production Systems of Southern Zambia</td>
<td>Chibinga Chifungwe Oswin</td>
</tr>
<tr>
<td>3    PhD Range Management</td>
<td>The Influence of Climate Variability and Change on Land-use and Livelihoods in the Southern Rangelands of Kenya</td>
<td>Amwata Dorothy Akinyi</td>
</tr>
<tr>
<td>4    PhD Management of Agroecosystems &amp; Environment</td>
<td>Evaluating Briquette Technologies and their Implications on Greenhouse Gases and Livelihoods in Kenya</td>
<td>Njenga Mary Mbura</td>
</tr>
</tbody>
</table>

11. KEY VISITORS TO THE DEPARTMENT

- Brett L. Bruyere - Colorado State University
- Prem Warrior – Bil & Melinda Gates Foundation
12. OUTREACH AND COMMUNITY SERVICE
- Tree planting
- Secondary School students mentorship

Members of the Loita Cultural Community Centre pose for a photograph with the CSDES after a partnership meeting between the two Centres.

13. LINKAGES ESTABLISHED OR CONTINUED
- Link between the Department of LARMAT and MEA Ltd to market Biofix
- African Network for Agriculture, Agroforestry & Natural Resources Education (ANAFE)
- AGRA funded regional MSc training in Department of LARMAT (2011-2013): Capacity Building in Sustainable Soil Resource Management
- RUFORUM funded regional PhD training for 3 PhD students in Department of LARMAT: Capacity Building in Dryland Resources Management.
- Centre for Sustainable Dryland Ecosystems and Societies (CSDES), a partnership with Colorado State University (CSU).

17. MAJOR ACTIVITIES HELD BY STUDENTS’ ORGANIZATIONS

TREE PLANTING/ENVIRONMENTAL CONSERVATION

This is a summary for CAVS students, staff and partnering institutions tree planting activities

<table>
<thead>
<tr>
<th>Date</th>
<th>Area</th>
<th>Number of tree seedling planted</th>
</tr>
</thead>
<tbody>
<tr>
<td>October-November 2012</td>
<td>Vet Farm Kanyariri</td>
<td>7000</td>
</tr>
<tr>
<td></td>
<td>Ngong Field Station</td>
<td>1000</td>
</tr>
<tr>
<td></td>
<td>Kibwezi Field Station</td>
<td>2000</td>
</tr>
<tr>
<td>April-May 2013</td>
<td>Vet Farm Kanyariri</td>
<td>10,250</td>
</tr>
<tr>
<td></td>
<td>Ngong Field Station</td>
<td>2000</td>
</tr>
<tr>
<td></td>
<td>Kibwezi Field Station</td>
<td>1000</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>26,250</td>
</tr>
</tbody>
</table>
A total of 26,250 seedlings, mainly of indigenous species were planted. Of these, 24,250 were planted in the University land, while 2000 were planted in partnership with the Kenya Air Force Environmental Soldier Programme, at Moi Air Base (MAB), Eastleigh. The table below gives the breakdown of the trees planted in the FY 2012/2013.

Table 1. Trees planted in the Financial Year 2012/2013 in partnership with various institutions.

<table>
<thead>
<tr>
<th>Date</th>
<th>Number of seedlings</th>
<th>Site</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Short Rains 2012 Season</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>November 2, 2012</td>
<td>8,000</td>
<td>Vet Farm, Kanyariri</td>
<td>Main tree planting day</td>
</tr>
<tr>
<td>November 17, 2012</td>
<td>2,000</td>
<td>Ngong</td>
<td></td>
</tr>
<tr>
<td>November 23, 2012</td>
<td>2,000</td>
<td>Kibwezi</td>
<td></td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>12,000</td>
<td>All sites</td>
<td></td>
</tr>
<tr>
<td><strong>Long Rains 2013 Season</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>April 17, 2013</td>
<td>1,000</td>
<td>Kibwezi</td>
<td>With Vet. Students Ass. &amp; local community</td>
</tr>
<tr>
<td>April 19, 2013</td>
<td>7,950</td>
<td>Vet Farm, Kanyariri</td>
<td>Main tree planting day</td>
</tr>
<tr>
<td>May 3, 2013</td>
<td>2,000</td>
<td>Ngong</td>
<td>With KTDA &amp; MAB</td>
</tr>
<tr>
<td>May 24, 2013</td>
<td>1,000</td>
<td>Vet Farm, Kanyariri</td>
<td>With KIPPRA</td>
</tr>
<tr>
<td>June 28, 2013</td>
<td>3,000</td>
<td>Vet Farm, Kanyariri</td>
<td>UoN Academic Division</td>
</tr>
<tr>
<td>April 30, 2013</td>
<td>2,000</td>
<td>Moi Airbase</td>
<td>With Kenya Air Force</td>
</tr>
<tr>
<td><strong>Sub-total</strong></td>
<td>14,250</td>
<td>All sites</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>26,250</td>
<td>All sites</td>
<td></td>
</tr>
</tbody>
</table>

**Types and Sources of Seedlings Planted**

The trees targeted for planting are mainly the indigenous species that are well adapted to local conditions, and do not have negative impact on the environment. Most seedlings planted as woodlots at Vet Farm and Ngong comprised of *Prunus africana* (red stinkwood), *Podocarpus gracilior* (podo) and *Vitex keniensis* (Meru oak), *Wamburgia ugandensis*. Other species planted were those suited to mark and secure the boundary of Vet Farm are Grevillea, Jacaranda, Nandi flame and Markhamia. In Kibwezi, the seedlings were carefully selected to ensure those planted are the adapted dryland species suitable for the semi-arid environment such as *Acacia species*, *Mellia* and *Olea africana*.

A large proportion of the seedlings were sourced from the University's Ngorng Station nursery that is managed by the Department of LARMAT. Among all the partners, KTDA donated the highest number (10,000) seedlings in the two seasons, 8000 of which were planted at Vet Farm and 2000 at Moi Air Base, Eastleigh and surrounding areas.
PHOTO GALLERY

The Principal CAVS, Prof. A.W. Mwang’ombe displays the Total Kenya Limited Eco-Challenge Trophy awarded to University of Nairobi for playing a key role in environmental conservation through tree planting. This was during the Award Gala Night held on Wednesday, June 26, 2013 at the Carnivore Restaurant. Prof. G. Kiama, the Director, Wangari Maathai Institute (left) and Prof. R. Michieka (right) also attended the occasion.

An assortment of indigenous tree seedlings assembled (above) ready for planting (below) at Ngong on May 3, 2013.
Principal CAVS, Prof. A. Mwang’ombe with students and staff watering a Podo seedling she planted at Ngong.

Aware and enthusiastic about this year’s CAVS tree planting theme ‘Greener Cleaner Environment’, students and staff endured the hot and dry weather in Kibwezi on April 17, 2013 to plant a total of 1000 seedlings. The seedlings were strategically planted just before the on-set of the rains to ensure they fully benefit from the usually very short and erratic rainy season.
The Kenya Defence Forces from Eastleigh Moi Airbase joined the University community and other partners such as KTDA in tree planting on April 19, 2013 at Vet Farm, Kanyariri.

Students out in Kibwezi Dryland Field Station carrying tree seedlings to a planting site. Students from the Department of LARMAT are always in the forefront when it comes to environments matters such as tree planting.

DEPARTMENT OF FIELD STATION
The Field Station continued to execute its teaching, researching and income generating functions during the year. Other important activities included collaborative research and development work carried out in collaboration with other college departments and linkage activities with outsiders. Efforts were made to improve on farm-record. The Field Station acquired of green-houses from the Menthly Bromide Alternative Project, which was under Prof. E Mutitu and we have successfully planted two crops and are in the process of cropping the second crops mainly capsicum and tomatoes. The farm has also improved in indigenous vegetable production, green maize and other crops.

Coffee Production Unit
Efforts to improve coffee production through better manuring, mulching and improved canopy management has continued with more emphasis in use of organic manure from the livestock unit Animal production and Vet Farm. The general quality of our coffee for early and late crop 2013 improved compared to the crop realized in 2012 with 75 tons of cherry produced. The main objective targeted improving production per tree while also improving the cup-quality.

Horticulture Production Unit
Vegetable production continued to record impressive growth with a widened range of products including capsicums, tomatoes, indigenous vegetables, green maize, beans kales spinach etc. The orchard for macadamia nuts has also realized better sales for the nuts this year.

Livestock Production Unit
a) Dairy Herd
   The dairy production has improved tremendously over the last one year. We current have 15 dairy cattle with production range of 10 to 15 litres per day
b) Beef Herd
   The beef animals are currently 78 this reduction is as a result of selling through slaughtering; this realizes better profits for the section. There is general improvement in health of the animals.
c) Beef Steers
   Efforts have been made to fatten bull calves bought from Veterinary Farm so as to be sold as beef we currently have 24 bull calves.

d) Pasture and fodder
   Pasture has been planted in various fields over the last one year with variety of pastures and fodder crops to improve ad help in supplementation of the dairy herd. Which are kept under semi zero-grazing.

Poultry Unit
Poultry unit was established in line with the vision 2030 project in the farm. The unit has with over 600 indigenous chicken. The project produces fertilized eggs and breeder cocks. There is a hatchery of 500 egg capacity and a hatchery unit under construction which will be producing a day old chicks. We also collaborate with Animal production department to hatch and sell chicks. Currently we have successfully hatched over 3500 chicks, and sold over 300 breeding cocks. The poultry unit has participated in various exhibitions organized by various Agricultural and Livestock Agencies such as KARI, University of Nairobi and Agricultural shows.

Fish Farm
A fish farm was established in line with vision 2030 project and currently the farm has 20 ponds, stocked with over 45,000 tilapia fish. We are currently constructing smaller ponds for teaching and research. There is a fish processing unit under way. Various training on Fish Farming have been undertaken by members of staff on handling and rearing fish, conducted by the Ministry of Fisheries Development. The Permanent Secretary of Fisheries visited the section on 20th June 2012 during the official launch of the Fish Farming Project. There was training for short courses on poultry farming conducted in 2013, and more training will be done.

Participation in Nairobi International Trade fair.
During 2013 International Trade Fair, the Field Station had an excellent performance wining a total of 125 prices and 19 trophies in Livestock, Poultry, and Farm Produce. The Farm participated for the first time in indigenous chicken and worn several trophies.

The Field Station won the following Prizes:

<table>
<thead>
<tr>
<th>First Prize</th>
<th>Second Price</th>
<th>Third Prize</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dhania (coriander)</td>
<td>20. Cauliflower</td>
<td>39. 2 bundles celery</td>
</tr>
<tr>
<td>1. Kales (Sukuma wiki)</td>
<td>21. Fruits of egg plant</td>
<td>40. 6 onions – white variety</td>
</tr>
<tr>
<td>2. Sweet Potatoes (Red type)</td>
<td>22. Bundles of Dhania</td>
<td>41. One band 12 bananas cooking type</td>
</tr>
<tr>
<td>3. Groundnuts</td>
<td>23. 10kg bags of fresh sweet potatoes – white</td>
<td>42. 10kg sweet potatoes – white type</td>
</tr>
<tr>
<td>4. Beans (Mwezi Moja)</td>
<td>24. 2 Kgs groundnuts</td>
<td>43. 6 onions – red variety</td>
</tr>
<tr>
<td>5. Njahi (Dolichus)</td>
<td>25. 3 bundles of kales (sukuma wiki)</td>
<td>44. 6 fruits – egg plant</td>
</tr>
<tr>
<td>6. Celery</td>
<td>26. 5 kg doliches – Njahi</td>
<td>45. 5kg Mwitemania beans</td>
</tr>
<tr>
<td>7. Egg Plant</td>
<td>27. 5kg cream cowpeas</td>
<td>46. Credited for small scale farmers.</td>
</tr>
<tr>
<td>8. Carrots</td>
<td>28. 3kg macadamia in shell</td>
<td></td>
</tr>
<tr>
<td>9. French Beas (snap beans)</td>
<td>29. 3 beetroots</td>
<td></td>
</tr>
<tr>
<td>10. Spinach</td>
<td>30. 2 bundles of spinach</td>
<td></td>
</tr>
<tr>
<td>11. Broccoli</td>
<td>31. 1 kg of French beans</td>
<td></td>
</tr>
<tr>
<td>12. Cooking bananas</td>
<td>32. 3 bundles of amaranths</td>
<td></td>
</tr>
<tr>
<td>13. Cauliflower</td>
<td>33. 10 budnles of garlic</td>
<td></td>
</tr>
<tr>
<td>14. Amaranths</td>
<td>34. 5kg Mwezi moja beans</td>
<td></td>
</tr>
<tr>
<td>15. Red Onions</td>
<td>35. 6 onion – white variety</td>
<td></td>
</tr>
<tr>
<td>16. Blade Nightshade</td>
<td>36. 3 cabbage – hybrid Gloria</td>
<td></td>
</tr>
<tr>
<td>17. Heavy weight Indigenous Vegetable trio</td>
<td>37. 3 heads of red local cabbage</td>
<td></td>
</tr>
<tr>
<td>18. Best Indigenous vegetable trio</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Overall Best trio Indigenous chicken trio of the show.</td>
<td>38. One band of 12 bananas – cooking type</td>
<td></td>
</tr>
</tbody>
</table>

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College Annual Report: 2012/2013
Pictorial presentation of College of Agriculture and Veterinary Sciences activities:

CAVS in fulfilling one of her core values of nurturing and caring for the environment plants trees twice per year at the farms under the College mandate and care. These include upper Kabete campus, Kanyariri Veterinary Farm, Ngong forest and Kibwezi field station. CAVS does proactively engage with neighboring communities and other stakeholders in tree planting.

CAVS staff and students having fun as they prepare to plant seedlings in November 2013 at Kanyariri Veterinary Farm.

Indeed tree planting function is too good to miss and here as CAVS gets down to the really action of planting trees the Principal share a light moment with students and staff during the tree planting in November 2013 at Kanyariri Veterinary Farm.

This is it as it has to be done. CAVS staff and some student leaders get down to business of planting tree seedlings during the tree planting in November 2013 at Kanyariri Veterinary Farm.
CAVS Students heading for tree planting at Kanyariri Vet Farm on 4th April 2014.

Prof. P. K. Gathumbi addressing staff, students and invited guests during tree planting at Kanyariri Vet Farm on 4th April 2014.

Staff, Students and invited guests cheer Dr. J. Omiti, KIPPPRA CEO, who was the Chief Guest during tree planting at Kanyariri Vet Farm on 4th April 2014.
Prof. G. Kironchi addressing staff, students and invited guests during tree planting at Kanyariri Vet Farm on 4th April 2014.

Dr. Ganga Rao, Senior Scientist from ICRISAT, Nairobi planting a tree seeding and assisted by students during tree planting at Kanyariri Vet Farm on 4th April 2014.

CAVS Students and staff in the process of plant tree seedlings during tree planting at Kanyariri Vet Farm on 4th April 2014.
CAVS Students and staff in the process of planting tree seedlings during tree planting at Kanyariri Vet Farm on 4th April 2014.

Neighbors including young children could not resist the fun and joy of planting a tree and readily participated during tree planting at Kanyariri Vet Farm on 4th April 2014. The farm has gradually become greener as a result of annual tree planting.

In 2013, CAVS College Management Board held a retreat at Kibwezi Field Station focusing on Performance Enhancement Strategies, Leadership and management issues while embedding Team work Sessions. This workshop was facilitated by Empowerment Resource Technologies.

The retreat objectives included:
- Performance Enhancement
- Intellectual Stimulation
- Acquire fresh perspectives
- Enhance team spirit
Seed Bean crop in Kibwezi Field Station - August 2013

CAVS College Management Board (CMB) visiting Kibwezi Field Station during the CMB Retreat in August 2013

Beef Bulls at Kibwezi Field Station: August 2013

CAVS CMB Members during a team building session in Kibwezi Field Station in August 2013

CAVS CMB Members during a team building session in Kibwezi Field Station in August 2013
CAVS CMB Members during a team building session in Kibwezi Field Station in August 2013 with Prof. W. Kogi-Makau in action.

CAVS CMB Members during a team building session in Kibwezi Field Station in August 2013 with Mr. E. Mugo, driver in Plant Science and Crop Protection taking charge of the ball.

CAVS CMB Members during a team building session in Kibwezi Field Station in August 2013 with Prof. S. M. Kiama, Director, WMIPES defending his team.

CAVS CMB Members during a team building session in Kibwezi Field Station in August 2013 with both Dr. F. I. Mugivane, Chairman, Agricultural Economics and Dr. J.E. Mande, Chairman, Clinical Studies Department trying to hit the ball. Who is in control here?
CAVS CMB Members during a team building session in Kibwezi Field Station in August 2013. Even Accountants can also manage footballs as demonstrated by Mr. Ndiritu, CAVS Bursar who is demonstrating his skills in controlling in the ball.

CAVS participates in several shows and exhibitions within and outside Kenya. The performance of CAVS at National International Trade Fair has been exemplary and in 2013, CAVS scooped 125 awards and 19 trophies and this is no mean achievement.

CAVS show committee members are presenting to Prof. A. W. Mwang’ombe, the Principal, some of the trophies the college was awarded during the NITF 2013 during a brief ceremony at the Principal's office.