ONE HEALTH CENTRAL & EASTERN AFRICA (OHCEA)

ANNUAL REPORT

2016
# LIST OF ACRONYMS AND ABBREVIATIONS

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<thead>
<tr>
<th>S/N</th>
<th>Acronym/Abbrev</th>
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<tr>
<td>1</td>
<td>AECC</td>
<td>Animal Ethics and Experimentation Committee</td>
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<tr>
<td>2</td>
<td>BVM</td>
<td>Bachelor of Veterinary Medicine</td>
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<td>3</td>
<td>BVSc</td>
<td>Bachelor of Veterinary Science</td>
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<td>4</td>
<td>CBPP</td>
<td>Contagious Bovine Pleuropneumonia</td>
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<td>5</td>
<td>CCHF</td>
<td>Crimean-Congo haemorrhagic fever</td>
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<td>6</td>
<td>COVAB</td>
<td>College of Veterinary Medicine, Animal Resources and Biosecurity</td>
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<td>7</td>
<td>CPDs</td>
<td>Continuing Professional Development</td>
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<td>8</td>
<td>CVMS</td>
<td>College of Veterinary and Medical Sciences</td>
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<td>9</td>
<td>DRC</td>
<td>Democratic Republic of the Congo</td>
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<td>10</td>
<td>DTRA/CBER</td>
<td>Defence Threat Reduction Agency/Cooperative Biological Engagement Program</td>
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<td>East Africa Training Consortium</td>
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<td>22</td>
<td>MOUDESS</td>
<td>Movement of Breeders for Senegal Development</td>
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<td>MUHAS</td>
<td>Muhimbili University of Health and Allied Sciences</td>
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<td>National Institute for Medical Research</td>
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<td>Neglected Tropical Diseases</td>
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<td>Sokoine University of Agriculture</td>
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<td>36</td>
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<td>University of Rwanda</td>
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<td>United States Universities</td>
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CEO’s FOREWORD

Hello,

Welcome to the One Health Central and Eastern Africa (OHCEA) Report for the year 2016. This report provides highlights of a few of our most significant activities, events and happenings over the last one year. We hope it will provide useful insights to you.

I would like to first of all, thank our funders;
1) United States Agency for International Development (USAID), especially for funding and supporting the One Health Workforce Project, through the Emerging Pandemic Threats II Program;
2) International Development Research Centre (IDRC) for the support to the Eco-health Project and
3) Sandia National Laboratories for supporting the biorisk management training workshops and other capacity building activities.

I would also like to thank our partners who have worked with us and supported us in the successful implementation of our projects. These include; University of Minnesota, Tufts University, The Defence Threat Reduction Agency, local and central governments in the 8 countries where we are, P & R, FAO and other country-level partners that I have not mentioned here. You all make our network much stronger and a formidable force in the region.

This report focuses on the three projects mentioned above.
1. One Health Workforce Project: In this reporting period, our teams across the network have worked hard to ensure that we deliver on our project objectives and network mission. Please note that in this project, OHCEA did not have any activities under Objective 1 as per agreement with the funder and partners.

With the support of the project, the network has expanded; moving into new territory in Francophone Africa. We now have offices in Senegal and Cameroon. To bring this region to speed with the rest of the network, a technical advisor was appointed.

One of the key areas of emphasis for the project is experiential field-based learning/training, which has led to the creation of One Health demonstration sites in all the eight countries. We believe this strategy will enhance and strengthen institutional efforts of One Health multidisciplinary field-based trainings. We share with you a few field stories of the One Health Demonstration Sites field attachments and testimonies of our students who have had exposure and experience training at these sites.

Student-initiated and driven activities and initiatives ensure that the future One Health Workforce gains the necessary knowledge and competences in One Health leadership, critical analysis, community/stakeholder engagement, communication, among others. We have several stories sharing experiences of some of the activities our One Health Innovations Students Clubs (OHICS) have been engaged in
during this reporting period. One key outcome of these activities is increased awareness and interest in One Health across the OHCEA institutions in the eight countries. we are seeing a growing students’ movement for One Health in Eastern, Central and Western Africa.

Exposure to and involvement in disease outbreaks provide valuable teaching and learning opportunities that support the building of practical skills in infectious disease detection, response and prevention. Tens of students have over the last one year, been involved in disease outbreaks of different diseases and varying magnitudes.

In order to strategically position herself, OHCEA developed a research agenda focused on priority One Health areas and also developed a gender mainstreaming strategy. We bring you highlights of these.

2. Under the IDRC-supported Ecohealth project being implemented in Kasese district, a lot of work has been done especially in engagement and education of communities in and around Queen Elizabeth National Park, on the transmission, signs and symptoms, prevention and management of zoonotic diseases common in the area. This followed several short KAP studies that were conducted to inform the design of the education interventions.

The dissemination/education sessions that were conducted thereafter were very interactive, informative and enhanced the knowledge levels of the community members and the project and district staff.

3. With support from Sandia National Laboratories of the USA, much-needed training in biorisk management was conducted, with OHCEA working as the regional local contractor. This training has been hailed by the beneficiaries as very critical and an urgent intervention for many countries in the region.

Your contribution to all these efforts, achievements and outcomes is very much appreciated. We hope to scale even higher heights with you in the coming year.

Thank you all for being a partner in this journey!

Dr. William Bazeyo
Professor of Occupational Medicine and CEO OHCEA
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A BRIEF ABOUT ONE HEALTH CENTRAL AND EASTERN AFRICA NETWORK (OHCEA)

OHCEA is an international network of ten public health, ten veterinary higher education institutions and one pathobiology institute that are located in 14 universities in 8 countries in Eastern, Central and Western African region. The countries are: Cameroon, Democratic Republic of Congo, Ethiopia, Kenya, Rwanda, Senegal, Tanzania, and Uganda. The Universities included in OHCEA are: Université des Montagnes and University of Buea (Cameroon); University of Lubumbashi and University of Kinshasa (DRC); Jimma University, Addis Ababa University and Mekelle University (Ethiopia); Moi University and University of Nairobi (Kenya); Université Cheikh Anta Diop (Senegal); Muhimbili University of Health and Allied Sciences and Sokoine University of Agriculture (Tanzania); University of Rwanda (Rwanda) and Makerere University (Uganda). Started in 2010 by a group of One Health visionaries in 6 countries and 14 institutions, the network has grown and spread to more areas of the African continent bringing on board more institutions. OHCEA’s strategic approach is leveraging on national, regional and international partnerships to enhance One Health surveillance, reporting and response capacity development; One Health innovations infrastructural development; knowledge management and information sharing and science-education-policy-practice interface. The network works with the eight national governments where it is operational, professional associations in the region including veterinary, nursing, public health and medical associations. At the global level, the network collaborates with universities in the US; Tufts University, University of Minnesota, Tulane University and the Sandia National Laboratories (USA) among others.

The universities in OHCEA are collaborating to build One Health capacity and academic partnerships between the member institutions in the region and with governments. The overall goal of this collaboration is to enhance One Health policy formation and implementation at various levels, in order to contribute to improved capacity of countries to respond to any emerging pandemics in the region. The OHCEA networks’ vision is ‘to be a global leader in One Health, promoting sustainable health for prosperous communities, productive animals and balanced ecosystems. OHCEA seeks to expand the human resource base needed to detect and respond to potential pandemic disease outbreaks, and increase integration of animal, wildlife and human disease surveillance and outbreak response systems, through innovative pre-service and in-service programs.

OHCEA is strategically positioned to attract more partnerships and collaborations in Africa, Europe, Asia and other parts of the world in its quest to become a global leader in One Health approaches.
In the year 2016, OHCEA registered significant strides in the areas of network strengthening, project implementation, government engagement as well as creation of partnerships and collaborations. In this report, highlighting selected significant achievements and events, we focus on three projects at OHCEA;

1. The USAID-supported One Health Workforce being implemented in all 8 countries. For the purposes of this report, we will share with you highlights under objectives 2, 3, 4 and 5. In the period under review, USAID guidance prioritised objectives 2-5 over objective 1 to allow time for the networks to get up and running, and allow for P&R Project to interact with national One Health Platforms.

2. IDRC-supported Ecohealth project being implemented in Kasese District of Western Uganda

3. Sandia National Laboratories -supported Biorisk Management (BRM) Trainings.
CHAPTER ONE

INTRODUCTION:

The United States Agency for International Development (USAID) One Health Workforce (OHW) project is strengthening the capacity of the global health workforce to prevent, detect and respond to emerging infectious diseases. Focusing on two infectious disease hotspot regions; central and eastern Africa and Southeast Asia, OHW strengthens training and educational programs in universities to create a skilled workforce by using the transdisciplinary One Health approach. The One Health approach brings together various disciplines such as medicine, veterinary medicine, public health, nursing, and ecology to work together, to more effectively address health challenges at the interface of animals, humans, and the environment. Emerging infectious diseases are among the most pressing of such challenges.

Recent and ongoing threats around the world have showcased a critical need for health workers that are prepared to manage diseases that cross human, animal and environmental health sectors. The 2013 emergence of the Ebola virus in West Africa called for a workforce at all levels that had the technical skills and competencies to work well within their own disciplines and sector, but also possess the skills to work across sectors and disciplines to promote coordination and communication among all the stakeholders necessary for effective and efficient control of an infectious disease outbreak at this global angle.

A One Health approach is essential to achieving the Global Health Security Agenda vision due to the complex nature of pandemic threats. It does require a shift in every country’s workforce culture and regulatory framework. Government ministries, industries, non-profits, and academic institutions must work together to achieve a stronger and more effective public health system, from the first responders on the front line to the policy makers implementing change. Universities within the OHCAE network are key drivers of One Health change as they educate the future One Health workforce and forge partnerships with governments and communities to support workforce strengthening and decision-making through action research, analytic tools, and service work.

ONE HEALTH WORKFORCE PROJECT OBJECTIVES:

The One Health Workforce project is being implemented under 5 objectives namely;

1. **One Health Workforce Assessment, Planning and Policy Communication**
   The goal of activities and strategies under this objective is to ensure that universities in the network coordinate with multiple ministries, partners and communities to identify and address One Health workforce needs. Aspects included in here are; development of country roadmaps, capacity building for tools that support multi-sectoral coordination, community One Health and risk communication activities, evidence-based policy communication products like policy briefs, policy papers and memoranda. In the period under review, no activities were conducted under this objective.

2. **Support networks to assist government ministries to train the future OH Workforce**
   Activities and strategies under this objective are designed with the goal of ensuring that university
students learn One Health competencies through university courses, One Health club activities, field attachments, global health case competitions, and community-based learning activities.

3. Support the networks to assist government ministries to train the current (In-service) OH workforce
   The goal of activities and strategies under this objective is to have increased in-service workforce capacity to prevent, detect and respond to emerging pandemic threats. Activities are designed to enable government officials and educators participate in trainings on zoonotic outbreak response capacity, animal health capacity, and One Health core competencies.

4. Faculty/staff development and improved academic offerings
   Increased university capacity to sustainably address workforce training needs, is the goal of this objective. Under here, strategies and activities engaged in include development of One Health course content, community learning sites, faculty development in support of One Health teaching, research and outreach; etc.

5. Organisational Development: Positioning the OH networks as long-term sustainable leaders in One Health
   This objective has the goal of increasing the network’s capacity to sustainably address workforce training needs through strategies and activities like expansion of the network in terms of membership and coverage, staff trainings, development of manuals, guidelines and strategic documents, determining strategic directions for the network, among others.
The period Nov 2015 - Sept 2016

Summary of achievements in the period under review. Note that this information covers...
Objective 2: Support networks to assist government ministries to train the future One Health workforce

Activities and strategies under this objective are designed with the goal of ensuring that university students learn One Health competencies through university courses, One Health club activities like Outreaches, field attachments at One Health Demonstration sites, global health case competitions, outbreak responses and community-based learning activities.

Establishment of One Health Demonstration Sites

A multi-disciplinary field attachment is a powerful tool of exposing upcoming health professionals to the One Health concept and its application during their basic training. The experience broadens the participants’ definition of health, and hence the intervention strategy to address health issues, through the recognition of the intricate linkage between humans, animals and the environment.

Providing practical training to future professionals in multi-disciplinary teams, will create holistic, highly-effective and efficient wealth professionals who will be able to tackle current and future.

This year 10 Universities, schools identified sites for field-based multidisciplinary One Health teaching and learning opportunities. The selected sites typically face serious health challenges at the intersection of human health, animal health, and environmental health. They are therefore considered ideal for students’ learning as well as design of interventions to address the identified challenges. Sites set up in 2016 are the following in each country;

**Cameroon:** Cameroon Development Corporation (CDC) Plantations, Limbe Botanical Gardens at Mount Cameroon National Park, & Elbach Ranch of Ndawara, used by University of Buea

**Ethiopia:** Gibe Dam in Oromia Region used by Jimma University and Ashenge in Tigray Region used by Mekelle University

**Kenya:** Amboseli Ecosystem at Loitoktok used by Moi University and University of Nairobi

**Rwanda:** Akagera National Park used by University of Rwanda

**Tanzania:** Kilosa Demonstration Site used by Sokoine University of Agriculture and Muhimbili University of Health & Allied Sciences

**Uganda:** Kasese, Hima, Lyantonde, Rubirizi, & Ssanga Districts used by Makerere University

The field attachment exposed the students to the application of the One Health concept using an experiential learning model.
A multi-disciplinary field attachment is a powerful tool of exposing upcoming health professionals to the One Health concept and its application during their basic training. The experience broadens the participants’ definition of health, and hence the intervention strategy to address health issues, through the recognition of the intricate linkage between humans, animals and the environment. By training future professionals on how to work in multi-disciplinary teams, Kenya will have a new crop of holistic, highly effective and efficient health professionals who will be able to tackle current and future grand health challenges.

The University of Nairobi and Moi University successfully completed their first One Health Demonstration site field attachment. The three-week activity was undertaken in July and August 2016; the participants being students and faculty from Moi University and the University of Nairobi assisted by faculty from the University of Minnesota and Tufts University; both of the US. This field attachment took place in Amboseli, Loitokitok Sub County in Kajiado County, an area characterized by high human-livestock-wildlife interaction and conflict with increased risk of zoonotic diseases transmission as well as environmental degradation.

The 34 students who took part in the activity were drawn from five undergraduate courses; medicine, nursing, veterinary medicine, wildlife and environmental health. The activity began with a five days pre-placement training held at the University of Nairobi, Faculty of Veterinary Medicine. Some of the key topics covered during the orientation included introduction to the One Health concept, building one health teams, community entry and needs assessment among others. Five multi-disciplinary teams were formed during the pre-placement training and each team focused on an assigned Manyatta (a Maasai settlement).

Cognizant of the importance of involving various sectors and departments in this activity, field activities began with a stakeholders meeting, attended by sub county administration officers, medical and veterinary officers, public health officers and the Amboseli community members. Through this interactive meeting, the students and faculty had the opportunity to introduce the One Health concept to those in attendance and to familiarize stakeholders with the goal and objectives of the field training. The team also got a broad overview of the health status and the lifestyle of the local community.
The University of Nairobi and Moi University successfully completed their first One Health Demo site field attachment. The three-week activity was undertaken in July and August 2016; the participants being students and faculty from Moi University and the University of Nairobi assisted by faculty from the University of Minnesota and Tufts University; both of the US. This field attachment took place in Amboseli, Loitokitok Sub County in Kajiado County, an area characterized by high human-livestock-wildlife interaction and conflict with increased risk of zoonotic diseases transmission as well as environmental degradation.

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The five teams worked closely with various professionals and community members of the respective villages to conduct a comprehensive needs assessment. Resource mapping exercises, key informant interviews, focus group discussions and participant observation were used to gather information. Students visited slaughter slabs, livestock and food markets, health facilities, Kenya Wildlife Services department, agrovets and the Amboseli National Park for more objective assessment of the community health needs.

Some of the needs identified were animal diseases such as brucellosis, coeneurosis, foot and mouth disease, Contagious Caprine Pleura Pneumonia, contagious bovine pleura pneumonia, cysticercosis and lumpy skin disease. Human health challenges included respiratory tract disorders, eye infections, diarrheal diseases, Sexually Transmitted Infections, bed bug infestation, poor human waste disposal and injuries secondary to wildlife attacks. Destruction of wildlife habitats, soil erosion, deforestation and poor human waste disposal were some of the identified environmental challenges.

The One Health teams rigorously engaged the community members in prioritizing the identified health needs. Coeneurosis was a common animal disease in all villages and most of the community members were eager to learn about its transmission, prevention and control measures. Other problems were bedbug infestation, poor human waste disposal (open defecation, lack of pit latrines)
The most feasible short-term interventions that the students could carry out in two weeks were health education sessions focusing on the community-felt needs. Working in their multi-disciplinary teams, students came up with innovative ways of passing the key health messages to the community members. Skits, health talks using visual aids and demonstrations were used to pass on health information.

The teams disseminated the findings of the community needs assessment and the interventions they had carried out to stakeholders.

**Key achievements from the field attachment include:**

- Exposure of students to the One Health concept early in their career, which is vital in ensuring that health professionals gain a holistic view of health challenges and are well equipped to develop effective problem-solving strategies.
- Appreciation of the roles other disciplines play in health promotion and the need and benefits of working in multi-disciplinary teams.
- Dissemination of the One Health concept to the in-service professionals who interacted with the students and faculty during the field attachment.
- Application of the One Health approach in community needs assessment, needs prioritization and intervention design and implementation.

*Left to right; A student discusses issues of her allocated village and various groups discuss their identified village problems*
OH Demonstration Site innovations: using locally available resources to expel bats by Makerere University Students

During the OH Demo sites in Kasese Municipality, a multidisciplinary team of about fifteen students including Social Scientists, Environmental Health Scientists, a Meteologist, a Biomedical Laboratory Technologist, a Telecommunications Engineer, an Industrial and Organisational Psychologist, a Software Engineer, a Wild Life Conservationist, a Veterinary Medicine, a Medical Doctor and a Development Worker encountered a problem of bats in Kahendero Primary School.

Meeting pupils, parents and teachers

Bats are probable reservoirs of Haemorrhagic Fevers - Ebola, Marburg etc. and rabies. They also emit offensive odours making inhabiting houses where there are colonies difficult.

Previous solutions offered by the Veterinary and Wildlife departments included fumigating the bats and disposing of the dead ones - this was done at Kahendero Health Centre. However, they do return after a period of time and the fumes are toxic to the community especially the occupants of the houses.
However, bats are also useful to the ecosystem and therefore if it were possible the colonies of bats should be encouraged to relocate back to the bushes and trees instead of colonizing the houses. The students came up with an ecosystem-friendly bat repellent made out of ethno substances (eucalyptus bark and leaves and cinnamon) which, when applied to the houses would successfully expel the bats. The pungent smell of the oils from these plants is a good repellent. In order to extract these oils a solution of alcohol was needed and a local gin popularly known as ‘kasese’ was easily obtained. To be able to apply the ecosystem-friendly ethno-bat repellent to the buildings paint was used as a base to enable the repellent remain for a longer period of time on the walls.

*Painting the school building with repellent near places where bats hide*
Ethiopia Holds the First One Health Students’ Field Attachment

Jimma and Mekelle universities carried out their first One Health students’ field attachment in Ashenge district, Southern Tigray from July 21st to 27th, 2016. The attachment involved 40 students and 17 faculty members from veterinary, public health, nursing and midwifery. Partners from University of Minnesota and Tufts University participated and facilitated the attachment including the customization workshop and training of students.

The main aim of the attachment was not only to expose students to the complex nature of health challenges at the human, animal and environment interface but also to triggered interest create capacity in young health professionals to work in multidisciplinary teams. The purpose of such attachments is to contribute to creating a One Health workforce necessary for sustaining the One Health approach and initiatives. Using the local structures (leaders and technical staff both health and veterinary officers), teams extensively engaged communities and other key groups like the fishing community to identify and prioritize health challenges (human, animal and environment), plan and propose interventions using the One Health approach.

Students attending to a sick cow during the attachment
Key Achievements:

- Community health challenges identified
- Enhancement of management, leadership, communication and team spirit among the professionals and the students
- Hands on experience by students on community assessment and engagement using One Health approach
- Advocacy for the use of One Health approach at community level and among district officials
- Intervention measures delivered by students using different methods including role plays

The attachment is a useful tool for building capacity of young health professions to work across disciplines and such activities should therefore be encouraged so as to contribute the much needed On Health workforce.
Student One Health Innovations Clubs (SOHIC)

One Health Innovations Students' Clubs are a platform where students from different disciplines convene for innovative intellectual debate and engagement around identified One Health challenges. SOHICs are a platform where students get space and opportunity to develop skills and competences in the OH Leadership, Community engagement, analysis and communication.

In 2016, all schools had established One Health Innovations students' Clubs to raise awareness about emerging pandemic disease threats and appreciation for an interdisciplinary and multi-sectoral approach. Activities engaged in include lectures, community outreach events, OH day celebrations, on-campus awareness creation; among others. Through collaborative and community-based activities, students learn about the roles and responsibilities of different disciplines and sectors in addressing public health challenges and developed knowledge and skills related to infectious disease prevention, detection and response. They learned community engagement skills critical in the management of outbreaks.
a) Community Outreach

Community outreach activities serve a dual purpose of promoting community health awareness while providing students with an in-depth understanding of local One Health challenges. Most OHW-supported community outreach activities are organized by interdisciplinary One Health student clubs at member universities. In these activities, University students and faculty addressed community health challenges through applied, field-based research and outbreak investigations. Students and faculty members have visited communities, schools, and university campuses. In the year 2016, most outreach activities focused on locally relevant health challenges including ebola, anthrax, brucellosis, rabies, jigger infestation, yellow fever, Rift Valley fever and antimicrobial resistance. The expectation is that once aware these communities will be better prepared to prevent and respond to an emerging pandemic threat if and when it arises as a result of such engagement efforts.

Below are bullet lists of some of the activities that have been engaged in by students and faculty in the different countries.

**Ethiopia**
- Rabies awareness campaign at Seto Semero High School in Jimma
- Solid waste management activity in Jimma
- Education on zoonotic infectious diseases, with particular emphasis on Rabies, Bovine TB, Brucellosis, Schistosomiasis, Toxoplasmosis and other food safety issues, in Tigray region.

**Kenya**
- Creating One Health sensitization/awareness among primary school students.
- Anti-jiggers campaign and Rabies vaccination, Kipkelion, Kericho County
- Rabies vaccination and primary health care activities, Kitale

**Senegal**
- Rabies vaccinations for dogs in Fatick

**Uganda**
- Rift Valley Fever Outbreak Investigation and Response in Kabale District
- Yellow Fever outbreak investigation in Masaka District
- Building rabies awareness among community members who keep dogs as pets in celebration of World Veterinary Day, Kampala

Students engage community members at household level on rift valley fever outbreak.
b) Student Involvement in One Health Day Commemoration

Under their One Health Innovations clubs, students organised several activities to commemorate the One Health Day, November 3rd. These included on-campus debates and awareness campaigns, community outreaches focused on key relevant zoonotic diseases and other community health challenges. Students also took part in the One Health commission-organised student competitions.

Students Celebrating One Health Day in Senegal

To celebrate the International One Health Day November 2016, the One Health Students’ Club of EISMV participated in a 3-day campaign to treat cattle and sensitize communities in Pikine, Dakar. The activity was organized by the MOUDESS (Movement of Breeders for Senegal Development) and benefited from technical support from the Students’ Club. The students started off the campaign by providing medical consultations and treatment of cattle from the Pikine area. A total of 1430 ovines, 408 bovines and 16 camels were treated. They also used the opportunity to create awareness about the One Health approach and sensitize the participants about One Health approaches and how actors collaboration and community participation are important to improve health. The President of the One Health Students’ Club explained how the One Health approach is great to addressing zoonoses and described the links between animal health, human health and animal conditions.

Rift Valley Fever outbreak Investigation: One student’s story

Ronald Ssenyonjo (Year 5 Veterinary Medicine student)

I extend my sincere thanks to you, One Health Students Club Makerere University and the entire staff of OHCEA Uganda office for training me in disease outbreak response and later giving me an opportunity to participate in Rift Valley Fever investigation in Kabale.

Thank you for giving me a chance through Ms. Doreen Birungi to work with colleagues outside my profession. It was really nice and very interesting to operate with medical personnel, social mobilisers, and psychologists on the same team in the field. My teamwork skills, social skills and reporting skills greatly improved during the exercise and it is one of the exercises I will never forget.

Furthermore, I would wish to bring it to your notice that I received my entire stipend and once again give credit to OHCEA for the transparency in every activity organized.
Students injecting an ovine

The club President giving a talk on One Health
Global Health Students Case Studies Competition proves an excellent learning approach: The University of Rwanda case

University of Rwanda held a 2-day Global Health Case study competition (GHCC) for Students in December, 2016.

The purpose of this was to train the future one health workforce that is able to respond to global health threats in a multidisciplinary manner.

This was the first of its kind in the regional network; it was a competitive exercise for students to creatively address challenges within a limited time frame. The Global health case competition offered an opportunity to students to work in an innovative manner. It was an enriching exercise enabling sharing of experiences by students coming from different programs at the University of Rwanda. Through global health case competitions, students creatively address critical global health challenges in a competitive and collaborative environment that simulates future workplace settings by requiring a multidisciplinary team composition.

The topic of the event was “A multidisciplinary approach of responding, treating and controlling disease outbreaks: a case of Ebola in Rwanda”.

Competencies that students can develop through this opportunity include:
- Synthesizing information under pressure
- Prioritizing issues
- Recognizing and working within resource constraints
- Working within and appreciating multidisciplinary teams
- Integrating various perspectives and methods
- Applying evidence-based decision-making to global health problems

Methodology: The Global Health case competition brought together contestants (students) from the One Health Students Club. These came from different disciplines and 4 different campuses of the University of Rwanda; UR-Nyagatare, UR-Huye, UR-Nyamishaba and UR-Nyarugenge campus. Faculty were identified to support these students who were grouped randomly in multidisciplinary teams. Students came from Veterinary Medicine, Wildlife and Aquatic Resources Management, Biotechnology, Botany and Conservation, General Medicine, Environmental Health, Nursing and Midwifery, Nutrition and Dietetics and Biology.

Prof. Carolyn Porta from the University of Minnesota briefing contestants about Global Health Case studies competition
The students were in 8 teams of 5 multi-disciplinary students with a faculty attached as a mentor. Four Teams were put in separate rooms with different judges, their respective mentors and supervisors. Following that, the teams went in a common room for the semi-finals (the best 4 teams) and finals (the best 2 teams) from which the very best was selected. The team of judges came from government institutions that included; Rwanda Biomedical Centre, Rwanda Agricultural Board, Rwanda Development Board, USAID Mission, PREDICT, Private Public Health practitioners and several faculty. The best team was given a Trophy, Medals and Bags to carry their computers as a way of appreciating their efforts and commitment.

Dr Shyaka Anselme, School of Animal Sciences and Veterinary Medicine, College of Agriculture, Animal Sciences and Veterinary Medicine (Left) with his Global Health Case competition Winning team

Contestants responding to questions from Judges

Judges listening to the presentations
It was the first time the students participated in a competition of this nature which gave them a rare opportunity to share experiences and learn from each other.

“This promotes multidisciplinary collaboration among students. This helps in bringing the professional silos and increases awareness about complementarity among different disciplines” Sibomana Flora, Medical Student.

It also gave an insight to the students that fighting against disease spread and emergences requires multidisciplinary collaboration. Additionally, The Global Health Case competition built students presentation, public speaking, leadership and communication skills. Arinaitwe Enock a Botany and Conservation student said that the event built his critical thinking skills. He also appreciated his role in management of outbreaks.

University of Rwanda is planning to continue with the same at different campuses of UR to the benefit of those who never had the chance to participate in this competition.
**Objective 3:** Support the networks to assist government ministries to train the current One Health Workforce (In-service training)

The goal of activities and strategies under this objective is to have increased in-service workforce capacity to prevent, detect and respond to emerging pandemic threats. Activities are designed to enable government officials and educators participate in trainings on zoonotic outbreak response capacity, animal health capacity, and One Health core competencies.

**Democratic Republic of Congo Trains Territorial Authorities in Prevention and Response to Public Health Emergencies in the Democratic Republic of Congo**

The One Health approach encourages multi-sectoral collaboration and multi-disciplinary approach to resolving issues of health, the application of the International Health Regulations (IHR 2005) and the Global Health Security Agenda - GHSA.

In this context, there is need for seasoned, competent, legally-recognised public sector staff to apply the principles of prevention and control of emerging and re-emerging diseases. The training of the territorial staff in DRC aimed to strengthen their capabilities in the application of the principles of prevention, early detection and management of public health emergencies that threaten the country. This training enables the territorial authorities of the Decentralized Entities to acquire the necessary capabilities to work in multi-disciplinary teams in the prevention and response to epidemics, epizootic diseases and natural disasters.

It is hoped that at the end of this training, the trainees will be able to contribute effectively to the prevention and response to emerging and re-emerging diseases (Ebola and other zoonotic diseases) and disasters.

The training of the territorial staff was built around three modules subdivided into units. These modules cover the concepts of leadership, organization and operation of the territorial units and Emergency Management.

*Participants in one of the trainings during group Work*
**Module 1** gave the trainees a succinct and clear idea about the concept of leadership in the One Health approach. It develops the One Health approach based on the skills expected of the territorial authorities now expected to work in a team to better communicate and to exercise better leadership to prevent and respond to outbreaks, contagious diseases and disasters.

**Module 2** aimed to strengthen the understanding and knowledge of the trainees in relation to the new territorial organization and administrative areas of the Democratic Republic of the Congo. Territorial administrators have a mission to administer the entities, to ensure the application of laws, regulations and guidelines and to ensure the safety of persons and their property and to promote their well-being. This module defines their roles and tasks in light of the different health and socio-economic situations that arise in their jurisdiction.

**Module 3**, entitled “Management of Public Health Emergencies”, addressed issues related to analysis of risks, the mobilization and the assessment of the needs of the community as well as the operations of emergencies. It equipped the territorial authorities with skills that can enable them to be competent in the management of public health emergencies occurring in their jurisdictions.

For the first intake, twenty (20) territorial administrators, including sector heads, chief medical officers of health divisions and general administrators were trained. They came from the two territories of the Kongo Central province (Kasangulu and Madimba). In the second batch, a total of thirty seven (37) were trained, coming the three territories of the province of Kongo Central (Kimvula Mbanza-Ngungu, and Songololo).

**Mekelle University Develops Guideline for Care and Use of Animals for Scientific Purposes**

Mekelle University through the support of the One Health Workforce project developed guidelines for the Care and Use of Animals for Scientific purposes. Six faculty, including Dr. Birhanu Hadush, Dr. Guesh Negash, Dr. Yohannes Tekle, Mr. Nigus Abebe, and Mr. Habtom Kiros and Dr. Berihun Afera facilitated the process. Dr. Mark Suckow from the University of Minnesota supported the process. This gap was observed after thorough discussions. The team noted that such guidelines do not exist in Ethiopia. To address this gap the team developed three important working documents;

1. Guidelines for care and use of animal for Scientific purposes
2. Animal Ethics and Experimentation Structure and Process
3. Animal Ethics and Experimentation ethical Approval Application format

The team then conducted a three-day training for 80 multi-sectoral professionals on Care and Use of Animals for Scientific Purposes. The training attracted professionals from different sectors, mainly research institutes namely; Bureau of Agriculture, Tigray Science and Technology Agency, Tigray Agricultural Research Institute and Mekelle University faculty from College of Health Sciences, Dryland Agriculture and Natural Resources and Veterinary Medicine.
Dr. Kindeya Gebrehiwot the President of Mekelle University noted that having the guidelines in place and conducting the training is a step forward in animal health research in Ethiopia.

Participants agreed that key steps after the training include;

- Continuous follow up and training for professionals from relevant sectors of research
- Ethical approval process should be started as soon as possible
- Mekelle University initiating the establishment of Animal Ethics and Experimentation Committee (AEEC) soon
Dr. Kindeya Gebrehiwot the President of Mekelle University with some of the training participants and facilitators

**OHCEA Senegal Trains Ministry Focal Persons and university Leaders in One Health (OH) Leadership**

Senegal trained selected ministry and university professionals in the promotion of the One Health concept; the ideals of multi-sectorial and interdisciplinary collaboration. The 5-day training was attended by 24 participants from academic institutions (ISED, EISMV, ISE) and ministries (Ministry of Armed Forces, Ministry of Commerce, Ministry of Women, Ministry of Culture, Ministry of Health, Ministry of Justice, Ministry of African Integration, Ministry of Higher Education, Ministry of Local Authorities).

*Left: A cross section of the participants during a plenary session and right; during small group work*
Tanzania Equips In-Service Leaders with One Health Competences

In Tanzania, a One Health in-service leadership training was conducted for in-service health professionals, in May 2016, with introductory One Health leadership skills and competencies and to establish and strengthen a progressive One Health leadership development programme for the OHCEA network within the country. The training also aimed to develop and build leadership mentorship skills and experience towards establishment of an active mentoring network in the target districts of Kilolo, Mbarali, Njombe and Iringa. The training aimed at addressing barriers to the One Health approach through developing experience and competency in communication, collaboration and leadership.

This was the third in-service course on One Health leadership among leaders in Tanzania.

The School of Public Health and Social Sciences of Muhimbili University of Health and Social Sciences (MUHAS) in collaboration with Sokoine University of Agriculture (SUA), Disaster Management Department of the Prime Minister’s Office and the Ministry of Health and Social Welfare, Emergency Preparedness and Response Unit organized the workshop with OHCEA support.

The district workers trained included District Medical Officers, Veterinary Officers, District Planning Officer, District Education Officers and District Health Officer from the four selected districts. The diverse backgrounds of participants provided an opportunity for sharing of experiences both among participants, as well as between participants and facilitators.

The training emphasized key One Health leaders’ competence areas—visionary & strategic, communication, team building and change management.
Objective 4: Faculty/Staff Development and Improved academic Offerings

Increased university capacity to sustainably address workforce training needs, is the goal of this objective. Under here, strategies and activities engaged in include development of One Health course content, community learning sites, faculty development in support of One Health teaching, research and outreach; etc.

OHW supports faculty development trainings designed to improve faculty skills in instructional design and the creation of educational materials for classroom and online instruction settings. The education materials development aspect focuses on creating high quality One Health-related online learning materials for use in blended and fully online courses. Activities conducted under this objective in the year 2016 included curriculum reviews, development of new academic programs, building the capacity of faculty in instructional design and e-learning.

OHCEA Develops a Suite of One Health Modules

In addition to strengthening health curricula and instruction, the network has been involved in the development of new course materials covering a wide range of One Health topics and competencies. New course materials have been organized on a modular basis so that they can be adapted to suit the needs of different training programs or university degree programs.

One of the most significant achievements of this reporting period under this objective is work that has been done to finalise sixteen (16) One Health Modules covering the following topics;

1. Ecosystem Health;
2. Gender and pandemic threats;
3. Infectious disease management.
4. One Health Leadership.
5. One Health Principles and Concepts.
6. One Health Research.
7. Outbreak investigation, Response and Antimicrobial resistance.
8. Communication and Informatics
10. Epidemiology.
12. Management.
15. Culture, Beliefs, Values & Ethics.

Although not complete, a significant amount of work has been achieved in preparing the modules for completion. The modules are a significant addition to the network’s legacy documents.

The Inter-States Veterinary Medical School Develops a Wildlife Management and Health Surveillance Masters’ Program for Veterinary and Environmental Health Students at EISMV

Senegal through the Inter-States Veterinary Medical School developed a Masters Degree program on “Wildlife Management and Health Surveillance” with two specialities which are” Wildlife Veterinary Medicine and Protected Areas” and “Wildlife Veterinary Epidemiological Surveillance”.

Ten (10) core training modules and 5 modules for each specialty were developed and potential stakeholders as well as course credits and the number of hours have already been proposed.
The seed of the idea to develop the program was planted at a workshop whose initial goal was to develop a module on wildlife and disease surveillance for VPH master students, was finally oriented towards the development of a full Master’s program. The workshop conducted in August 2016 was attended by 18 participants coming from several institutions (EISMV, ISED, Senegal Ministry of Environment, Senegal Ministry of Livestock, International Union for Nature Conservation).

A second workshop was held in October 2016 for the consolidation and validation of the program contents and their transformation into Licence-Master-Doctorat format. This activity was supported by two experts: Prof Germain Jerome SAWADOGO, curriculum design expert and Prof Ayayi Justin AKAKPO, Epidemiology and animal health expert.

**Use of Mixed Methods in Research to address Critical One Health Challenges**

University of Rwanda (UR) Nyagatare campus hosted a team from University of Minnesota, UR staff and One Health Innovations Students’ Club representatives from the seven UR campuses. The visit conducted in April 2016, featured a number of activities.

Day One featured a mixed research methods seminar held at Cyamazima campus and was attended by all staff from College of Agriculture, and Veterinary Medicine and College of Medicine and Health Sciences.

The objectives of the seminar were; describing the state of science of mixed methods research, including philosophical and methodological advances in the last decade; identify common mixed methods designs, including purposes for
each design; discuss key attributes of successful mixed method research projects; critique a mixed method publication for strengths and weaknesses; generate a research question that is appropriately answerable with a mixed methods design and identify three strengths of a well-written mixed methods manuscript.

Day 2 focused on One Health Innovations Students’ Club activities, including research and grant writing. Students who had received One Health Workforce research scholarships

The idea of “case competition” was also presented to the students’ club as a platform where students can share knowledge across their campuses, other universities in Rwanda or abroad over specific topics in form of competition. This can help students to develop and enrich their understanding of different topics but in this case One Health competency.

The students suggested that this could be done through:

- Creation of multidisciplinary groups and competitions at campus level
- Choosing of case competitions based on available challenges

Grant winners presenting their projects to staff and fellow club members

Students contribute to the discussion and Prof Barbra Porta commenting on presentations
Instructional Design: Over 30 Lecturers skilled to Engineer experience and Transform Students at Makerere University

Over 30 lecturers have been trained to improve the standards of their teaching environment and maintain an up-to-date curriculum with the aim of creating a transformative path for their students. This was during a one-week Instructional Design Training (20th - 24th June 2016) with Dr. Gregory Sales, a Professor of Instructional Design and Technology at the University of Minnesota.

The Instructional Design Training aimed at engineering instructional experiences that can make the acquisition of knowledge and skills more efficient, effective, and appealing among students.

Convening at Protea Hotel-Kampala, participants were introduced to new techniques of teaching, developing learning materials, different training models and theories as well as using up to date learning and teaching software. They were also guided on how to determine the state and needs of the learner, defining the end goal of instruction as well as creating some “intervention” to assist in the transition of knowledge and skills between students and lecturers.

According to Dr. Gregory Sales, instructional design should always be one of the key tools in the teaching curriculum because it helps instructors to pass through a well-informed pedagogical process, test the theories of learning and actively engage in student-only, teacher-led or community-based settings.

“There are many instructional design models but many are based on the ADDIE model with the five phases: analysis, design, development, implementation, and evaluation. As a field, instructional design is historically and traditionally rooted in cognitive and behavioral psychology, though recently constructivism has influenced thinking in the field,” he said.

Speaking to some of the participants, they said that the Instructional Design Training is a cross cutting field that is so vital to every instructor regardless of his or her academic discipline.

According to Resty Mwogeza- E learning consultant at Uganda Management Institute (UMI), the training enabled her to embrace the new paradigm shift of developing instructional materials that emphasize aligning learning outcomes with assessment and content.

To Dr. Norbert Mukasa from Department of Mechanical Engineering- Makerere University, the training provided him with knowledge on how he can align his teaching objectives with the course content and be able to disseminate information accurately and confidently. “The course has engineered a wonderful experience in me and I am happy that I am going to pass on the same experience to others,” he said.

In her closing remarks, the team leader of the Instructional Design Training, Ms. Joanne Kisaka encouraged participants to always take learning opportunities seriously whenever they occur so as to gain more knowledge and experience.

“Let us make sure that the students that come out of our hands are better experienced for the world to benefit. Skills and knowledge can be applied in any field” said Ms. Kisaka.

A group of trainees engaged in a group activity during the training.
Objective 5: Organisational Development: Positioning One Health networks (OHCEA) as long-term sustainable leaders in One Health

This objective has the goal of increasing the network’s capacity to sustainably address workforce training needs through strategies and activities like expansion of the network in terms of membership and coverage, staff trainings, development of manuals, guidelines and strategic documents, determining strategic directions for the network, among others.

One Health Central and Eastern Africa University Network (OHCEA) Network Expands to more regions and institutions

OHCEA encompasses 21 member schools in 14 different universities across 8 countries in Western, Central and Eastern Africa. This year, OHCEA expanded into Francophone West Africa, adding Senegal and Cameroon as its newest member countries. To support this expansion and ensure efficient coordination of technical activities in Francophone countries, OHCEA recruited a Technical Advisor for Francophone countries. OHCEA also added two more Ethiopian schools; the School of Public Health at Mekelle University and the Akililu Lemma Institute of Pathobiology at Addis Ababa University.

The Launch of One Health Central and Eastern Africa (OHCEA) in Cameroon

The Faculty of Health Sciences, University of Montagne became a member of OHCEA in July 2015. A year later, OHCEA expanded the network in Cameroon by adding University of Buea’s Faculty of Health Sciences, and Faculty of Agriculture and Veterinary Medicine. Following one year of implementation of the USAID funded One Health Workforce project in Cameroon, OHCEA was officially launched on 28th October 2016 at the Hotel Mont Febe in Yaoundé.

The launch brought together key One Health (OH) stakeholders in Cameroon government, EPT partners, Development Partners, USU Partners, University Representatives and OHCEA representatives. The representative of the Minister of Health, Cameroon Professor Samuel KINGUE was the chief guest. Also in attendance were officials of the Ministry of Higher Education; some members of the Diplomatic corps accredited to Cameroon; Representatives from Predict; P&R; Faculty members of both Universities, members of the Students One Health club. Prof John David Kabasa, was the Head of delegation of OHCEA.

The President of the University des Montagne, Professor Lazare KAPTUE - the host - paid tribute to OHCEA for having admitted the two institutions into the network thus giving them the opportunity of building a professional workforce capable of responding to zoonotic diseases. He promised to work with partners to contribute to Global One Health Movement.

Professor John David Kabasa delivered the occasion’s key note address on the role of Universities and Education in general in shaping a professional workforce capable of combating emerging and re-emerging zoonotic diseases.
He cautioned that Africa being a ‘global bio-risk incubator’, there is need to be safe and clean as Africa moves about to integrate and do business in the global world. He called for a dissolution of ‘sectoral and discipline tribalism’, starting with university training, urging that the future is intertwined.

OHCEA sets out to articulate the One Health Research agenda and a resource mobilization plan for research funding

A cross section of participants from left- standing: Dr. Shyaka Anselme (National University of Rwanda), Dr. Sarah Ssali (Makerere University), Prof. Peter Gatongi (Moi University), Prof. Robinson Mdegela (SUA), Prof. Omer Njajou (Université des Montagnes Cameroon), Prof. Donati Tarimo (Muhimbili University of Health and Allied Sciences), Prof. Mutuku Mwanthi (University of Nairobi, School of Public Health), Dr. Irene Naigaga (OHCEA Secretariat), Dr. Yohannes Tekle Asfaw (Mekelle University Ethiopia), Ms. Winnie Bikaako (OHCEA Secretariat), Prof. Ntambue Mukengeshayi Abel (University of Lubumbashi, DRC)

Squatting from left: Mrs. Agnes N.Yawe Kahundha (Secretariat), Mr. Timothy Wakabi (Secretariat) and Dr. Innocent Rwego (University of Minnesota/ Makerere University).
A multi-disciplinary team of nineteen faculty from OHCEA member institutions and the Secretariat staff set out to develop the networks’ draft research agenda and a resource mobilization plan to guide resource mobilization for research projects at a meeting that was held at the Intercontinental Hotel, Nairobi Kenya in April 2016. The team comprised specialists in public health, veterinary health, gender and health systems strengthening.

The draft research agenda was grounded on OHCEA’s niche as the only network of Universities in the region that works to secure the health of humans, animals and eco-systems through strengthened high education using multi-disciplinary teaching and learning practices and environment in Africa- a hotspot of emerging and re-emerging diseases.

Participants reflected on diseases of significant public health and economic importance locally, regionally and globally. They identified about forty diseases and conditions that were categorized into seven themes recommended to be the focus for One Health research for the coming 5 years. Institutional and country research priorities highlighted by participants and global health concerns as informed by the Global Health Security Agenda (GHSA) were key references in shaping the research themes. The seven themes include (not in any order):

1. **Bats Transmitted Diseases** including Ebola; Marburg; MERS; SARS; Nipah Virus

2. **Hemorrhagic fevers** including Rift Valley Fever; Dengue; Zika; CCHF; Lassa fever; Chikungunya; Hanta Virus; Yellow Fever.

3. **Neglected diseases (with emphasis on NTDs)**- Schistosomiasis and Soil Transmitted Helminths; Leishmaniosis; Toxoplasmosis; Leprosy; Onchocerciasis; Trachoma; Cryptosporidium; Leishmaniosis; Lymphatic Filariasis; Soil transmitted helminths; Toxoplasmosis; African Sleeping Sickness.

4. **Anti-Microbial Resistance** taken broadly to include anti-biotics; multi drug resistance including that associated with HIV; Microbial resistance.

5. **Bio-Security and Bio-Safety (Bio-Risk Management)**

6. **Ecosystem Health - Non Communicable Diseases/Conditions (including its linkages to food security and food safety)** - Mycotoxicosis; Aflatoxins; Malnutrition; Diabetes; Heart Diseases; Hygiene issues; Pollution.

7. **Endemic Diseases-** Anthrax; Brucellosis; Rabies; Q. fever.

With consensus on the above themes, participants considered the most feasible resource mobilization strategy to sustain and grow resources needed to support One Health research. Drawing on the rich experience of the facilitators, a number of options were elaborated including: (1) Formation of teams around the research themes and utilizing the capacities of faculty within OHCEA member institutions with interest and passion on the themes to write winning research grants. (2) A high level resource mobilization team at the Board level, complemented by people of given stature & specialists to hold targeted discussions with donors/agencies and (3) Secretariat coordinated efforts.

Focusing on one of the diseases under each theme, six hypothetical concepts were developed on Ebola, Brucellosis, Ecosystem health focusing on pollution, Antimicrobial resistance, biosecurity, and Soil transmitted helminths. These concepts will be fully developed upon securing relevant RFAs.
Gender Mainstreaming in the OHCEA Network

OHCEA network recognizes that gender equity and empowerment must be considered in all stages of any program design, and is committed to ensuring that social and gender integration is identified as a high priority at institutional, country and regional levels. Gender roles, the distribution of labor, access and control over resources play an important part in the biosecurity, control, prevention and response to infectious diseases and emerging pandemics. Gender inequalities interact with other inequalities such as ethnicity, socio-economics class and age. Therefore gender differences need to be addressed to better understand the risks and to help develop effective control and response strategies. The OHCEA network institutions will use a holistic approach to create more favorable incentives and structures for equitable development and assist country offices to design and implement gender-balanced and socially sensitive programs with lasting value. The secretariat will support the awareness-building and knowledge-strengthening activities and training needed to integrate gender considerations into all aspects of programming.

As part of the strategy the network is working to:

1. Develop a gender strategy and policy that will guide the implementation of activities and ensure gender and cultural equality are central to activities, organizational culture and public image.

2. Ensure that gender as a strategic concept is included as an analytical and planning tool and that One Health skills and competencies are engendered.

3. Create a gender integration training curriculum that weaves and fully integrates the key principles of gender equality and gender analysis throughout the program. As part of this OHCEA is developing capacity of faculty to carry out gender analysis through training. Rather than being seen as an ‘add-on’, gender considerations will be woven into all stages of the program cycle.

4. Mainstream gender across institutions
with students and faculty to include faculty development, curricula design, and teaching and learning methods and project monitoring and evaluation processes.

5. Develop a gender and infectious disease facilitator manual, as well as a collection of practical, user-friendly tools, resources and training material to support networks and their partners in integrating gender equity into daily project activity tasks while supporting a systematic and credible analysis on the gender implications of emerging diseases and pandemic crisis in different socio-economic and cultural contexts.

6. Identify gender gaps and work to mainstream gender considerations in all activities including faculty development, curricula design, teaching and learning methods, community interventions, field based programs and stakeholder engagements.

The Birth of the One Health Central and Eastern Africa (OHCEA) Gender Network

A team of gender champions formed a network within OHCEA on March 14, 2016 at Holiday Inn in Dar es Salaam, Tanzania. This was during a 5-day trainer of trainers (TOT) workshop on Gender, One Health and Infectious Disease. The workshop brought together 15 faculty from the seven OHCEA countries and 3 OHCEA Secretariat staff. Participants were drawn from different disciplines including veterinary medicine, human medicine, nursing, public health, environmental health and social sciences. The workshop facilitators were gender experts namely Dr. Hellen Amuguni from Tufts University, Ms. Niyati Shah, the USAID Senior Technical Advisor on gender and Prof Anthony Mugisha, Dean at the College of Veterinary Medicine, Animal Resources and Biosecurity (COVAB).

Participants were exposed to highly interactive training methodologies that ensured full participant engagement, manifested cultural diversity and questioned gender biases and stereotypes. With simulation and case study development, participants demonstrated the knowledge gained at the workshop on outbreak detection, prevention and response. Social media was made use of; Dr. Sarah Ssali, a gender expert at Makerere University posted tweets of the interactive processes, while Agnes Yawe set up a group page using WhatsApp for the network members to interact after
At the end of the workshop, participants drew country action plans which shall be shared with the OHCEA country teams, with the aim of devising strategies of implementing plans. The Secretariat staff too, prepared a regional work plan that will guide the process of mainstreaming gender across the network and institutionalizing gender through development of a gender policy, strategy and monitoring and evaluation indicators. To initiate the process of integrating gender in OHCEA work, some participants were invited to the OH modules development workshop scheduled for May 9-13, 2016 to engender the modules. The facilitators provided a Facilitator Guide, which they refined during the TOT, to each participant to guide the planned country gender-related activities for students and faculty.

Supporting University Networks to Expand and Grow: OHCEA Tanzania in Resource Mobilisation capacity strengthening Drive

In this reporting period, one such activity was organized by Tanzania. The purpose of the workshop was to provide grant writing skills to key faculty at Muhimbili University of Health and Allied Sciences (MUHAS) and Sokoine University of Agriculture (SUA) universities. These faculty are directly or indirectly involved with research on humans, animals (including wildlife) or both humans and animals as well as the environment in which they live and interact. The workshop aimed to equip the faculty with the concepts and practical skills on proposal writing to seek funding for research projects of their own. The workshop attendance was 20 faculty with about half of them coming from the human health side and the other half from the animal side.

The workshop was open to mid-level faculty from Muhimbili University of Health and Allied Sciences (MUHAS) and Sokoine University of Agriculture (SUA) involved in One Health activities or are interested in developing research proposal in the area of One Health.

Professor Philemon Wambura, the OHCEA Board Chairman, informed the participants that OHCEA is currently doing away with trainings that do not have tangible outputs. He further elaborated that OHCEA will be supporting training as a process towards achieving specific products like fundable research proposals. With the current main OHCEA funding (USAID-OHW) coming to an end by 2020, Dr Wambura challenged participants from member institutions to devote their efforts to respond to this challenge.

[Photo: Professor Philemon Wambura, delivering his remarks at the training]
By the end of the training, four proposal ideas were developed and sketched around the following areas;

1. Influence of human activities on the evolution and spread of Antimicrobial Resistance within and between humans, animals and environment compartments
2. Integrated hospital and community based strategies for controlling diarrhoeal diseases among pastoralist communities in Kilosa district, Tanzania
3. Reduction of Mycobacterium Tuberculosis Transmission through Promoting Awareness among Traditional Health Practitioners
4. Prevalence, knowledge and risk perception of zoonotic diseases in Kilosa district

The Transformation of a Veterinary Training College to a One Health Workforce Building Centre: The Story of the Faculty of Veterinary Medicine at Sokoine University of Agriculture in Tanzania

In June 2016, the Faculty of Veterinary Medicine at Sokoine University of Agriculture in Morogoro, Tanzania was transformed to form the College of Veterinary and Medical Sciences. The key driver for this transformation was the One Health approach that recognizes that the health of domestic animals, wildlife, and people are inextricably linked to one another and the environment.

From the general understanding, the veterinary profession that has been serving human kind for over 250 years, has modern veterinarians that not only serve as animal doctors, but also animal welfare advocates. In addition, they are key public health workforce because of their crucial role in: reducing global hunger, controlling zoonoses, monitoring food quality and safety, carrying out biomedical and medical research, and protecting the precious environment and biodiversity. Thus the workforce produced from the current veterinary education system, works at the inter-
face of animals, people and the environment to solve complex problems that impact health and conservation.

The Veterinary education in East Africa started in 1942 in Makerere College which was affiliated to University of London. In 1959 this Veterinary school shifted from Makerere University in Uganda to Nairobi in Kenya where in 1962 the School was incorporated into University College of Nairobi, Kabete Campus. Later the school was elevated to Nairobi Faculty of Veterinary Medicine in 1972 and started to award the Bachelor of Veterinary Medicine. In Tanzania the Veterinary Education started in 1976 when the division of Veterinary Science was established under the Faculty of Agriculture, Forestry and Veterinary Sciences of University of Dar es Salaam. After establishment of Sokoine University of Agriculture in 1984, the Division of Veterinary Science was elevated to form the Faculty of Veterinary Medicine. In June 2016, this Faculty was transformed to the College of Veterinary and Medical Sciences. Establishment of this College was officially approved by the University Council in June 2016 to spearhead quality training, research and outreach services.

For the time being, the CVMS is composed of eight departments; 1) Department of Anatomy, Histology and Cell Biology; 2) Department of Physiology, Pharmacology and Toxicology; 3) Department of Microbiology, Parasitology and Immunology; 4) Department of Medical Sciences; 5) Department of Veterinary Medicine and Public Health; 6) Department of Veterinary Surgery and Theriogenology; 7) Department of Veterinary Pathology; 8) Department of Biochemistry, Molecular Biology and Biotechnology.

At undergraduate level, initially the Faculty was offering the Bachelor of Veterinary Science (BVSc) which was later changed to Bachelor of Veterinary Medicine (BVM). It also offers programs in biotechnology, laboratory science and tropical animal health and production.

The current academic and research focus of CVMS is on Animal Health, Medical Sciences, Biomedical Sciences and Veterinary Public Health.

The College is a One Health college with a number of One Health projects and programs including: OHCEA, SACIDS, AFRIQUE One and Global Health as well as a number of other One Health-related projects funded by National and International organizations.

Transformation from the Faculty of Veterinary Medicine to the College of Veterinary and Medical Sciences is reflected from the immense contribution the institution has made in supporting the movement from the One Health Concept to practices.

- In 2010 the College initiated the Network of One Health networks. This initiative has been transformed to a platform with activities executed by the One Health coordination unit, under the Prime Minister’s Office, in the Department of Disaster Management.

- Veterinary graduates from the CVMS are now getting employed as academic members of staff in Medical schools including Muhimbili University of Health and Allied Sciences; and Catholic University of Health and Allied Sciences in Bugando, Mwanza Tanzania.

- Veterinary graduates from the CVMS who are now employed as researchers in Medical schools and at the Institute of Medical Research (NIMR) in Tanzania.

- Pre-service One Health training for staff and students from veterinary and medical schools through exchange programs.

- One Health multidisciplinary collaborative initiatives including joint field attachments at One Health Demonstration sites specifically the Kilosa demonstration site. In addition, different joint activities are implemented through the One Health Students Club.
• In-service One Health and leadership training workshops, Continuing Professional Development Programs (CPDs); and presentations during the professional associations’ meetings/conferences.

The recognition that over 60% of new, emerging, or re-emerging diseases have animal origins, justifies the need to widen the scope for joint research, training and outreach within and between institutions using the One Health approach. Tomorrow’s workforce for health sector must collaborate across disciplines and employ One Health approaches to produce simultaneous gains in human, domestic animals, wildlife and environmental health. Using effective cross-disciplinary collaboration will also create the potential for a multiplier effect of the efficiency and effectiveness of health interventions.
The IDRC Eco-health Project

Introduction
One Health Central and Eastern Africa recently won a grant from International Development Research Center (IDRC) Canada to implement an Ecohealth Project in and around Queen Elizabeth National Park, western Uganda. The project period is 2014-2018.

Objective of the project
To expand and consolidate the Ecohealth field in Central and Eastern Africa that aims to improve sustainability of conservation areas and the health of local communities, livestock and wildlife.

Specific Objective
i. Assess the burden of health problems and priorities to generate relevant information and evidence for change in policy and practice
ii. Identify and explore the cultural, socio-economic and ecological drivers for key environmental changes that affect livelihoods
iii. Translate research findings into evidence-based policy recommendations and bring increased awareness to communities and partners about health vulnerabilities, risks, and responses.
iv. Disseminate research findings throughout the OHCEA network and contribute to building African leadership in the emerging field of research on health, environment and society.

The project has five PhD students that it fully funds, five masters’ students in their final stages of completion and three more students who have recently joined to be supported in their research work. All the students are multidisciplinary working on addressing various health challenges to meet the project objectives.

Summary of activities accomplished;
i. Engagement with the communities and all stakeholders in and around Queen Elizabeth National Park (QENP) on the project goals and objectives. The project works with eight communities (4 fishing, 2 Agricultural (cultivators) and 2 pastoralists) from the districts of Rubirizi, Kasese and Rukungiri that share borders with Queen Elizabeth National Park (QENP; the study site).

ii. Recruitment of households for the study in and around QENP

iii. Conducted a number of trainings to include students and communities such as Outcome Mapping. Ethnographic research training, data management and analysis, and Geographic Information System (GIS).

iv. Organized two disseminations of study findings at the community and district level.

v. Trained health care workers from three districts in the study area on five common zoonotic diseases (Ebola, Anthrax, Brucellosis, Marburg and Rabies)

vi. Conducted a number of studies on prevalence of animal diseases (Leptospirosis, tickborne diseases, Contagious Bovine Pleural Pneumonia (CBPP), Health care worker and community knowledge of common zoonoses, utilization of family planning methods for both females and males.

vii. Created an Ecohealth “Community of Practice” professional through a yearly field school where we train about five summer students each year on Ecohealth approaches in the field.
OHCEA/ IDRC Dissemination of Results to the Study Communities

IDRC project disseminating the results of to one of the communities. From left, Prof Benon Asiimwe (Co-Chair IDRC-Eco-health), Dr Mugoya (DVO Rubirizi District), Dr. Kansiime Catherine, Jacob Iramiot (IDRC PH. D Student), Joshua Muhindo (IDRC MSc Student) and Benjamin Warufu (MSc Student and Head Research Assistant)

The IDRC Eco Health project has been carrying out different studies in and around areas of Queen Elizabeth National Park in the study areas of Kasese, Rubirizi and Rukungiri districts since September, 2014. The studies have been carried out by the project team and students (both Masters and PhD) under the project titled “Managing health risks among communities in and around Queen Elizabeth Conservation Area, Western Using the Eco-health Approaches”.

This dissemination was conducted between 12–16th August of 2016 in communities in and around QENP. Topics covered were from some previous two studies conducted by the project and students on;

i. Dissemination of the KAP study results was meant to alert the people in the communities above to always know their immediate surroundings (wild & domestic animals) and how to go about different challenges as far as zoonotic diseases prevention, detection and handling is concerned. As for the herdsmen, information about how to handle sick and dead animals was clearly highlighted.
For the Utilization of Modern Family planning services study, the disseminated information aimed at making people understand the available methods, what methods they were using, the side effects of some methods as well as education the participants on the proper use and access of family planning methods.

The exercise was generally a success irrespective of the low turn up and imbalance in age groups and gender, however representatives were achieved and all the areas targeted were reached. From the responses, actions and reactions and questions as well as the responses from the researchers and experts, the people seemed to have gained a lot from the exercise generally. For the two studies, details were offered by experts and the responsible researchers which made it easier to give off the information to the communities in the gatherings.
The audience involved Health workers from all the health facilities (Health Centre II, III, and Hospitals), Local Government officials, Secretaries for Health at the district levels and sub-county administrators from the study communities of Kasese, Rubirizi and Rukungiri Districts.

The health personnel particularly were Medical Superintendent, Medical officers, Clinical officers, Nurses, and Laboratory technicians/Assistants. The aim was to create awareness about zoonotic diseases and their management and give of feedback from the studies conducted.

This activity was aimed at:

a) Dissemination of research study findings on the zoonotic studies to the local leaders and health care workers from Kasese, Rubirizi and Rukungiri districts.

b) Train health workers on common zoonotic diseases (Anthrax, Ebola, brucellosis, Marburg and rabies) and how to manage them in Kasese, Rubirizi and Rukungiri districts.

c) Giving updates on progress to stakeholders on OHCEA-IDRC Eco-health Project in Queen Elizabeth Conservation Area to stakeholders

Way forward: District Local Council leaders pledged to budget for capacity building to offer refresher trainings to health workers, acquisition of equipment and facilitation to manage zoonoses during the next Financial Year 2017/2018. The project will follow up at district level to see if leaders include their proposal on training of health workers in their budget allocations,
On behalf of EATC, a Best Practices in BRM Training Workshop for previously developed trainers in the higher education sector was held in Nairobi, Kenya August 31 – September 1, 2016.

The Best Practices Workshop (BPW) was attended by 10 BRM trainers from the higher education sector in Ethiopia, Kenya, Rwanda and Uganda. All attendees had completed a Trainer Development Program (TDP) conducted under EATC in 2014. One accomplished trainer from each country was asked to deliver a “Challenges and Successes in BRM Training in the Higher Education Sector” presentation.

The presentations by university trainers on the various methods of delivering BRM training to university students generated valuable discussion amongst the participants on lessons learned on how to incorporate BRM concepts formally and informally into university curricula. The two primary modes of incorporating BRM into education include:

1. Formal incorporation through adoption of a BRM course with dedicated units for master’s level course.

2. Informal incorporation through (a) ad hoc BRM short course before or after normal university term or (b) BRM topics integrated into existing curriculum where no additional units are assigned.

Both of these modes require sufficient buy-in and stakeholder awareness of what is biosafety, biosecurity, biorisk management, how these topics relate to student education and university research, and why these topics are important to incorporate either formally or informally into curriculum. Incorporating BRM into higher education by university lecturers resulted in selected BRM topics being included in master’s level courses. These courses were populated either by continuing students or returning workforce enrolled in master’s level coursework.

Dr. Injera described a formal course at Moi University in which BRM is taught (MMB 804: GCLP and BRM). The curriculum was being revised at the time that Injera was developed as
a BRM trainer and thus he was able to formally integrate BRM principles into the curriculum. It is a 2 unit course (16 hours of lecture) offered to post-graduate students studying for the MSc in Immunology. He has integrated this course into programs for students of MSC Microbiology and MLS undergraduate students. The purpose of the BRM portion of the course is to equip learners with knowledge, skills and attitudes of laboratory biorisks (biosafety and biosecurity).

Dr. Gebisa reported that he has been able to informally insert concepts of BRM into other training sessions he has been asked to do around the country, as well as when he is teaching different courses for BSc and MSc students at Jimma University.

Gebisa reported that the challenges to delivery of BRM training to in-service personnel includes not knowing about the status of the current health sciences curricula across the country as it relates to principles of BRM (as the proposal was not funded), there is no funding to build BRM capacity and there is no dedicated office or group of personnel to manage the topic of BRM.

Dr. Mugambe reported that principles of BRM have been integrated into the Bachelors of Environmental Health Science coursework, and will also be integrated into the proposed Masters in Environmental and Occupational Health program. It is delivered as part of a Certificate in Infectious Disease Management. It is a 3-week lecture series taken by the students after their final exams and is followed by two months of attachment in either bioscience institutes or field work. Six modules are incorporated: Leadership, Gender & Risk Management, Outbreak Investigation, Biorisk Management, Anti-microbial Resistance and Health Policy.

Mr. Ndagjimana reported that the Vice-Chancellor of the University of Rwanda supports integration into undergraduate and post-graduate courses (such as that done at Moi University). Integration of BRM into the curriculum would be in line with the Global Health Security Agenda roadmap which has just been adopted by Rwanda (June 2016). The curriculum may be reviewed next year and Ndagjimana is targeting that time frame to attempt to integrate BRM curriculum formally into coursework. A current certificate program is supported by CDC, and perhaps BRM principles could be inserted into that program.

Feedback from the participants indicated that this was a very useful workshop and interaction.

“I was humbled by the fact that the feedback I got from the other participants was very encouraging to the delivery of this course at Moi University. It actually gave me confidence that what I was doing was in line with what the other colleagues were doing and thinking about across the region. I think when we have another opportunity to meet again, it will be time to harmonize our thinking and approach in order to have uniformity of purpose in the delivery of this course”.

“Thank you so much for the invitation to the Biorisk management workshop in Nairobi. It was such a great learning process listening and getting to know about the different bio-risk management initiatives in the different Universities within the OHCEA network. I was also excited by the development of guidelines to integrate Biorisk management in Pre-service students’ curriculum. Networking and grant writing was also an interesting output from the workshop”
Sandia Conducts The East Africa Training Consortium Biorisk Management Practices And Training Needs Survey

A survey was designed to query prior BRM trainees in the East Africa region about their BRM practices post-training and their perceived future training needs. Those invited to complete the survey were from Kenya, Uganda, Ethiopia, Tanzania, Rwanda and Cameroon who had been trained in the past five years by members of the Sandia National Laboratories International Biological and Chemical Threat Reduction group (SNL/IBCTR) in principles of biorisk management on behalf of the Defense Threat Reduction Agency/Cooperative Biological Engagement Program (DTRA/CBEP). Those surveyed are members of ministries overseeing laboratories in their countries, management and leadership of bioscience institutes, university professors and lecturers, biosafety and biosecurity officers, veterinarians and laboratorians. Surveys were completed by BRM trainers and trainees. Participants reported on their knowledge of BRM legislation status in their countries and BRM system implementation in their institutes. The survey queried participants’ perspective of their institutes’ BRM training needs, their observance of (trainers) or practice of (trainees) best biosafety and biosecurity practices and their opinion on what type of support they perceived to be most effective in enabling them to be successful BRM trainers/practitioners. Trainers reported the numbers of trainees reached in the previous year, the BRM topics they presented and their adherence to the best practices they learned during their BRM trainer development programs. Participants queried were either trained under country-specific engagement (e.g. Kenya, Uganda and Tanzania) or regional engagement of the East Africa Training Consortium (EATC). Regional engagement promoted cross fertilization and networking among countries and sectors. It was designed to develop BRM awareness, local trainers, and serve as a forum in which the trainers could share BRM best practices and identify and mitigate barriers to their implementation. Many of those surveyed have participated in both Introduction to BRM trainings as well as Trainer Development Programs, all with the full support of their leadership.
Indeed, many BRM trainers are leaders in their institute (professors, middle management, biosafety/biosecurity officers, and laboratory managers). The BRM system model is one in which management and leadership, biosafety/biosecurity officers and BRM trainers are engaged in developing an organizational safety and security culture for their institute. We believe that this model has proven to be one in which the sustainability of BRM systems can occur in that the stakeholders are able to mount a concerted response to national and international requirements, potential trans-boundary disease outbreaks, and regional threats taking full advantage of a common language and platform for BRM implementation. The goal of the survey was to gauge biorisk management (BRM) capacity in countries engaged through implementation of BRM trainings and development of local trainers.

Survey Objectives:

• To obtain and document a baseline of BRM practices.
• To identify gaps in BRM performance in the workplace.
• To identify strategies and opportunities to sustain BRM capacity.
• Determine the respondents’ perceived BRM competency and additional training needs, if any.
• Determine the extent to which the respondents are applying their BRM training in their place of work. Determine the extent to which developed BRM trainers have conducted trainings and their successes and challenges in doing so.

Survey Highlighted Findings

• Overall, less than 50% of respondents indicated that their institute had evidence of a biorisk management system in place (as defined by institutional BRM policy, documented risk assessments and audits; Figure 1); stratification by country indicated that Kenyans and Ugandans are further along than other countries in BRM system implementation.
• Biosafety / biosecurity practice least observed is ‘Reporting an incident (spill, needle prick, loss of sample, unauthorized access). This corresponds with the reported less than 50% reporting having an institutional BRM system.
• BRM trainings were reported in 68.9% of the trainers’ institutes.
• Trainers reported that BRM trainings conducted within their institute positively correlated with desired BRM behavior.
• 37 BRM trainers reported training 1538 trainees in the previous one year period.
• Trainers identify coaching from or co-training with expert trainers as being of the highest benefit to enable their success.
• Non-trainers identify coaching and mentoring from BRM experts as being of greatest need to enable their success as a BRM practitioner.

The majority of trainers (82%) and trainees (80%) belong to a professional society where BRM training and common practices could be anchored.