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Dear Reader,

I would first of all like to thank you for continuing to have interest in our work. The One Health Central and Eastern Africa (OHCEA) network is a formidable organisation and has continued to grow, making our contribution to addressing One Health challenges take on a continental perspective.

In this Issue of OHCEA News, we bring you developments in our areas of operation in the last 3 months. In this issue, we share with you activities and interventions we have been involved contributing to One Health Workforce development.

Our newest addition to OHCEA network - University of Buea – recently launched the One Health Students’ Innovations Club. This brings the number of OH Students’ Innovations Clubs to thirteen (13). OH Students’ Innovations Clubs have been and continue to be instrumental in creating awareness about One Health and mobilising communities to address OH issues in their surroundings.

In the area of supportive learning and policy environment, efforts have been made in several countries to address the key in-country issues. In this Issue of OHCEA News, we share with you a One Health Systems Mapping and Analysis Toolkit (OH-SMART) training for master facilitator that was conducted in Kampala. The training was a convening platform for academia and government representatives to discuss key issues in One Health Workforce planning. It was an interesting interaction; read the story for details.

Some of our knowledge and skills development activities this quarter have ventured into Biorisk Management, a new area for most of the countries. Read about the training in Rwanda and the outcome of this training. Other areas of action were risk analysis training for in-service professionals in Ethiopia and integration of OH module content in existing courses. Read this section of the newsletter for more details of these happenings.

In February 2017, Uganda experienced an outbreak of Highly Pathogenic Avian Influenza, HPAI (H5N1). Makerere University students had the opportunity to work alongside the national multi-stakeholder taskforce in managing the outbreak. This exposed the students to situations that contributed to building their skills in outbreak response.

Rabies and Brucellosis are among the priority zoonotic diseases on the lists of most countries in the OHCEA network. In Mekelle University and Makerere University students organised community outreaches this quarter focusing on these diseases.

To address issues of food safety in student eating places, students in Senegal organised an outreach to canteens and restaurants on University campus to sensitise restaurant workers and other stakeholders on the importance of ensuring safety in the food production chain.

I would like to sincerely thank all our country teams for contributing to this edition of the newsletter. Thank you very much!

Professor William Bazeyo,
Chief Executive Officer, OHCEA
The One Health Central and Eastern Africa (OHCEA) is a network of public health and veterinary institutions that are located in the Eastern and Central African region with the main goal of generating future leaders that have the capacity to address complex health challenges using the One Health approach. As the network continues to grow, the University of Buea in Cameroon was recently welcomed into the OHCEA network. Two institutions within University of Buea, namely Faculty of Health Sciences and Faculty of Agriculture and Veterinary Medicine, were admitted.

Experience within the network shows that One Health Innovations clubs play a key role in the promotion of One Health approach within a university and in surrounding communities. With this benefit in mind, the Student Innovations Club at the University of Buea was launched on 4th April, 2017 at the Faculty of Health Sciences. Deputy Vice Chancellor (in charge of Internal Controls) University of Buea was the Guest of Honour.

Specifically, the launch ceremony was designed to achieve the following objectives;

a) To create awareness on OH and GHSA issues, in order to stimulate the interest of the multi-disciplinary students of the University of Buea to gather together, form, and get involved in the OHSC.

b) To inform the students on issues such as Emerging Infectious diseases and One Health, and activities of other student club members within OHCEA.

c) To form a One Health Innovations Club, recruit the members, elect the leaders, and develop a strategic plan for the year 2018.

There was a good turnout of students from across several faculties of the University of Buea. The enthusiasm of the Deans of the Faculty of Health Sciences and the Faculty of Agriculture and Veterinary Medicine was an indicator of sustainability and ownership.

The President of the One Health Innovations Club of Universites des Montagnes also attended and shared experiences and strategies with his counterparts at University of Buea. The presence of the top management of the University of Buea and collaborators was a strong motivating factor for the students and activity leads.

Students also received information on activities of other Innovations Clubs within OHCEA. Soon after the launch, Club members met and agreed
on a set of activities for the Year 2018 including the setting up of a Club office.

The student club executive was also elected as shown below;
1. Tengen John – President
2. Mah Gerbie Dasi – Vice President
3. Ngoateu Chrysal – Secretary General
4. Mbah-Mbole Georgia – Public Relations
5. Ambebe Roussel – Financial Secretary
6. Foncham Faith – Minute Secretary
7. Nailibu Musa – Student Development Officer
8. Tanyi Taku – Communication and Student Liaison Officer
9. Mbah Clarisse – Social and Community Outreach
10. Kibu Odette – GHSA Action Package Officer
11. Foku Joice – Minute Secretary

President of UdM Student Club giving a brief account of their activities at the Launching of the OHCEA Student Innovative Club

Assessment of Country Capacity to Detect, and Respond to Emerging Pandemic Threats in Cameroon

Supportive policy changes for One Health Workforce development involves activities geared towards advocacy and engagement of policy stakeholders, workforce assessment to generate evidence for training gaps and needs as well as generation, authoring and sharing of policy papers. Supportive learning environment focuses on curricula review/reform, development of certificate and degree programs and courses as well as creation of centres and institutes.

Major areas of Concern:
The workforce assessment in Cameroon is an initial step in workforce planning and development processes and initiatives. In order to plan and develop workforce efficiently, an assessment is needed to identify the gaps before implementation. The general objective of the exercise was to establish Cameroon’s major capacities to predict, detect, and quickly respond to threats of public health concerns be they natural, deliberate or accidental. The assessment specifically addressed;
• The development and availability of human resources in the framework of prevention;
• The development and availability of human resources in the domain of detection for the effective implementation of the International Health Regulations (IHR) (2005)

For other dangers emanating from the IHR and points of entry, the assessment examined the required capacities in international airports responsible for application of necessary measures to manage various risks in public health.

The assessment was conducted using questionnaire jointly developed by the Ministry of Health and OHCEA, Cameroon. Information obtained was evaluated by convening stakeholders to discuss and validate the initial Draft report of the assessment. METABIOTA sponsored subsequent processes, including workshops to revise the initial draft report. The final report of the country’s assessment was presented to the Minister of Public Health and other stakeholders for appraisal, adoption and submission to the Joint External Evaluation Team.

The situational analysis of veterinary medicine teaching in Cameroon had the following objectives;
1) To describe the situation of veterinary teaching in Cameroon;
Policy & Learning Environment

Workforce development involves activities geared towards advocacy and engagement of policy stakeholders, workforce gaps and needs as well as generation, authoring and sharing of policy papers. Supportive learning environment involves certificate and degree programs and courses as well as creation of centres and institutes.

Country Capacity to Detect, and Respond to, Emerging Pandemic Threats in Cameroon

2) To identify gaps in the curriculum, types of specializations, the country’s needs in professional veterinarians;

3) To analyse the level of satisfaction of stakeholders (students, teachers, employers and graduates)

Based on the holistic approach, the following EPT-2 program partners in Cameroon participated in the assessments; FAO-ECTAD/Cameroon, PREDICT2, P&R/USAID, METABIOTA, CDC, Sectoral partner Ministries (12 Ministries), WHO/Cameroon, UNICEF, CAFETP and CP.

The first 2-day workshop for the validation of the initial draft report of the internal assessment of the sanitary system in Cameroon was held at the Falaise Hotel in Banandjo, Douala in March 2017 with the participation of the National Observatory for Public Health (NOPH), sectoral administrations and EPT-2 partners.

The results of the assessment were presented following the indicators and scores of the Joint External Evaluation (JEE).

1. For all human resources, the assessment noted that there were limited human resources to fulfill the major required capacities in form of IHR (SCORE 3). Major weaknesses were;
   - Inadequate numbers of qualified staff
   - Lack of a capacity building policy for trained epidemiologists.

2. In Cameroon, there is a training program in local epidemiology and/or applied epidemiology. There are two levels of FETP (basic, intermediate and/or advanced) or training programs in applied epidemiology are set up in the country or in another country through existing agreements. The number of epidemiologists however remain low for effective deployment in the country. (SCORE 4).

3. For the management of antimicrobials (SCORE 1), the assessment realized a lot of need as elaborated below;
   - Lack of adequate number of pharmacists in the human health system.
   - Lack of adequate number of veterinarians in the animal health system

4. For veterinary and animal health staff(SCORE 2), the following observations were made;
   - Weakness in local training in animal health
   - Inadequate number of veterinarians and animal health staff

5. For training and practice in the domain of health safety and security (SCORE 1), the observations were;
   - Lack of a continuous national training program in the area of health safety and security in all structures that stock or manipulate dangerous pathogenic and toxic agents;
   - Lack of a common curriculum for training in health safety and security in all structures that stock or manipulate dangerous pathogenic agents;
   - Limited staff training in health safety and security in all structures that stock or manipulate dangerous pathogenic agents has been done;
   - Assessment for needs in health safety and security have not been accomplished;
   - Staff don’t undergo training in procedures for biological safety and security except during the process of upgrading (P2 + P3 of CPC);
   - Cameroon has not developed and has not set up a teacher training program for health security and safety;
6. For surveillance systems based on indicators as well as surveillance of occurrences a SCORE 3 was obtained. The following observations were made:

- National learning institutions do not suggest training programs for health security for people who manipulate dangerous pathogenic agents;
- The country lacks finance and capacity to offer training in health security and safety;
- Insufficient national budgetary and human resources to allow for proper maintenance of structures and materials in appropriate times;
- Lack of a mechanism to guarantee and track staff competencies and their training in all laboratories;
- Insufficient equipment for individual protection for laboratory staff in the process of carrying out assessment of local risks;
- Lack of a framework for documenting, notifying, investigating and resolving incidents and accidents which occur in a structure on a national level.

7. For an efficient notification system at the WHO, the FAO and the OIE (SCORE 3), the assessment indicated that:

- Notification on microbiological dangers linked to foodstuffs is not done;
- There is no program for recycling of focal points raised in the notification chain of incidents of animal health at WHO;
- The same applies to the network and protocol of notification in the country, (SCORE 1); there is lack of stimulation tasks in animal health and joint tasks between the animal, human and environmental sectors.

The Need for Regional Capacity in One Health System Mapping and Analysis

A s major infectious disease outbreaks continue to emerge throughout Africa, agencies need to ensure effective prevention, detection and response to these threats by integrating multi-sectoral approaches. A new systems mapping tool, developed by the University of Minnesota and the U.S. Department of Agriculture, is an operational tool that maps out key organizations’ involvement in
outbreak preparedness and response teams. Workshops that train health stakeholders on how to use and train others on the tool are now being implemented around the world.

A total of 42 participants from eight countries representing universities within the One Health Central and Eastern Africa (OHCEA) network and from partner government agencies were trained on the use of the One Health-Systems Mapping and Analysis Resource Toolkit™ (OH-SMART™) mapping tool and planned for its use, among other tools, in supporting country workforce planning and strengthening in the region during a workshop on 13–17 February 2017 in Kampala, Uganda. The workshop also featured training on the OIE PVS tool, the CDC Zoonotic Disease Prioritization Tool (ZDPT), and the USAID Preparedness & Response project-supported One Health National Platforms tools. This training addresses a key capacity area in operationalizing One Health, improving cross-sectoral coordination and collaboration among agencies and assessing workforce needs and collaboration gaps for the development of a One Health workforce.

Response to emerging threats requires strong institutions that meet government-identified workforce needs by supporting the development of an ‘in-service’ and ‘pre-service’ workforce through improved education and training opportunities and enhanced partnerships. In the African region, this capacity is still largely weak.

One Health Central and Eastern Africa, working with the USAID One Health Workforce project’s US University partners, University of Minnesota and Tufts University, organized the regional OH-SMART™ implementer training and workforce planning workshop targeting senior faculty, and senior government representatives from Cameroon, Senegal, Rwanda, Uganda, Kenya, Tanzania, Ethiopia and DRC. The workshop also leveraged partnerships that have complementary tools and systems that can benefit workforce and government planning for infectious disease prevention, detection and response. These partners included U.S. Centers for Disease Control and Prevention (CDC), the World Health Organization (WHO), the FAO Emergency Centers for Transboundary Animal Disease (FAO-ECTAD) and the USAID Preparedness and Response (P&R) project.

All workshop trainees are involved in the implementation of One Health programs and activities in their respective countries and institutions. This mix of participants greatly enriched the discussions and impacted the outcome of the highly participatory and practical training. A key result of the workshop included the development of action plans for all eight countries to synthesize national action plans to identify cross-sectoral workforce skill gaps and needs for improving country prevention, detection and response that universities can address.

The OH-SMART™ tool:

The OH-SMART™ tool provides a standardized process for strengthening agency and stakeholder interactions around prevention, detection and control of infectious disease threats including antimicrobial resistance. Traditionally, evaluation and assessment of government efficacy has focused on individual agency processes and workforce issues, and rarely considered systems and activities that do (or should) cut across agency lines. The 5tool enables practitioners to analyze how existing collaborations are perceived within the multi-agency network, how the inter-agency collaborations actually work, and identifies discrepancies and opportunities to fill gaps and build best practices to strengthen multi-agency collaboration.

The training created understanding of the tool and built capacity in leadership and facilitation skills for the participants to be able to conduct the same training and support outcome processes in their own countries. It also equipped the participants with other tools that can enable them to identify cross-sectoral systems and identify workforce and operational gaps and challenges.

The first three days of the training
were dedicated to understanding the 6-step OH-SMART™ process of mapping and analyzing a One Health system or process in a specific setting and knowing how to implement the OH-SMART™ process with a network at the state/country/regional level.

The last two days were reserved for a Workforce Planning Meeting with the objectives of reviewing the One Health Workforce project’s Transformation Strategy, establishing a baseline of existing national/international workforce assessments conducted in the countries, and discussing challenges and opportunities for workforce planning at country-level. Country teams then created a plan for implementing OH-SMART™ and workforce planning in their respective countries.

Participants came to the training with expectations, a number of them fitting nicely in the training objectives. One participant expected to “learn how the tool can enable them to strengthen stakeholder engagement in One Health and in workforce development”. Another hoped to “learn how the tool can be applied to support response capacity for emerging infectious disease threats”, especially how the various agencies can collaborate more effectively with each other in managing these threats.

There was also anticipation that the training would provide insight into “how the tool can be used to bridge the gap between government and academia in order to more effectively plan for workforce development”.

Dr. Monica Musenero Masanza, former Deputy Commissioner in the Uganda Ministry of Health gave an opening statement for the training that spoke to the great need for One Health approaches in managing infectious disease risks, like Ebola. “Developing a One Health workforce requires insight and foresight that determines ahead what the graduates being trained will be confronted with in the future; this involves universities and employing agencies working together to determine the nature of workforce required for future needs. Graduates often fail to fit in the government system because there is an engagement gap between the universities that train the workforce and the government that employs them. Universities embraced One Health, but have not engaged well with the employers of the graduates (government). The graduates, once well trained, should be taken up in government and improve the system”. Dr. Masanza spoke from a lot of experience, having supported many processes in West Africa during and after the Ebola outbreak. One cannot help but pay keen attention to this observation.

During the training, participants were taken through the six steps of the OH-SMART™ and as country teams, worked their way through the steps to better understand how agencies interact around infectious diseases, and identifying actionable steps to improve the system. Building facilitation skills for participants was an integral component of the training to equip implementers with skills.
needed to facilitate a OH-SMART™ workshop and process.

"Using the tool in this workshop, we have seen the disconnections between the trainers and the consumers of the human resource trained. There is need to match training programs and approaches with the capacity/competence needs", remarked one participant from Uganda.

While going through an exercise on stakeholder interviews, “We realised [there are] gaps in One Health human resources in Uganda. For example, when there is a zoonotic outbreak and the Ministry of Agriculture, Animal Resources and Fisheries invites CDC on board, CDC will not respond until invited by the Ministry of Health", noted Dr. Monje, a Ugandan participant.

To many participants, especially from government agencies, the tool is a godsend. “This tool is fabulous; approaching other sectors has been a nightmare in my mind, but now I feel comfortable in approaching them. When I go back, I just want to see that the Ministry of Higher Education is leading the training component", Professor Francisca Monbenimp, Ministry of Higher Education, Cameroon, stated during the training.

As part of the workforce planning session, partners from WHO, CDC, FAO, and P&R presented various international and national tools and assessments done in country including:

- International Health Regulations; an international set of regulations to help the international community prevent and respond to acute public health risks that have the potential to cross borders and threaten people worldwide. The tool uses several sources of information and is validated by the countries.
- The Joint External Evaluation tool (JEE) is a voluntary, collaborative, and multi-sectoral tool that includes both self-assessment and assessment by external committee. It is a data gathering instrument designed to evaluate a country's capacities for health security, including all IHR and GHSA-relevant capacities across all relevant sectors at a national level.
- The CDC Zoonotic Disease Prioritization Tool is a five-step zoonoses prioritization process. The process leads to prioritized list of at least five endemic/ emerging zoonotic diseases agreed upon by all stakeholders and later approved by all ministries representing core voting members and discussion of next steps for prioritized zoonoses including identifying areas for multi-sectoral engagement in developing control and prevention strategies.
- National One Health Platforms were presented as an opportunity to enhance government and university engagement. These platforms are operational in six of the OHCEA countries - Cameroon, Ethiopia, Kenya, Rwanda, Tanzania, and Uganda.

Working in sector-specific groups (government, university, and external partners), participants discussed challenges and opportunities in effective government/university engagement.

Easy to implement initiatives identified for engagement included the use of existing platforms, structures and frameworks that are currently not being utilized much, as well as needs assessments that have been conducted in several countries, but have not been discussed by the key agencies, including government and universities.

At the end of the five-day workshop, participants in countries developed an action plan on how they plan to use the knowledge gained and tools exposed to in workforce planning while partnering with the organizations present.

Country key steps include plans to synthesize national workforce needs assessments that have been so far done, to identify workforce training and skills gaps that can be addressed by universities.

The expectation is that as a result of these processes, workforce development initiatives and plans will be harmonised and relevant to the countries' needs.
Knowledge & Skills

On the OHW transformation pathway, the knowledge and skills component is broadly about education and training interventions. Specific focus is on provision of scholarships to address areas of need, development of education materials, new courses and modules, training and professional development programs.

Rwanda Conducts Training of Trainers on Bio-Risk Management for In-Service Providers

Through the One Health Central and Eastern Africa (OHCEA) network, the University of Rwanda, in collaboration with the Rwanda One Health Steering Committee, organized the first phase of a 5-day training of trainers on bio risk management to equip in-service professionals with the required skills to meet Bio-risk standards for prevention and control of epidemic prone diseases. The training took place at Gisenyi, Rubavu district, 27th February to 3rd March 2017.

This activity is a priority to the Government of Rwanda as highlighted in the National One Health strategic plan for Rwanda. The One Health Workforce Project was therefore privileged to organize this workshop aimed at creating a pool of trainers on Bio-risk management.

A total of 25 participants from different institutions of Government were trained in this first phase. With the support of the steering committee chairman, trainees were sourced from the National Reference Laboratory, Rwanda Agricultural Board, Rwanda Development Board and a few laboratory technicians from the University of Rwanda. The Directors of these institutions also attended the 5-day training.

These same participants will be trained in the second phase in Year 4 of the One Health Workforce project to equip them with skills that will help them become better trainers. The trainees are expected to train their peers moving forward as the training is rolled out to other in-service personnel who have not benefited from this training.

The main objectives of this training were to:

1. Understand Bio-risk management, Biosafety and Biosecurity concepts and terminologies;
2. Become familiar with assessing Bio-risks, considering both Biosafety and Biosecurity;
3. Understand various categories of control measures for Bio-risks;
4. Understand the importance of measuring performance of Bio-risk management;
5. Become familiar with some measures for mitigating Bio-risks, and for managing and responding to incidents in the laboratory;
6. Understand the importance of and different methods for laboratory biosecurity;
7. Be ready to apply developed capacity on bio-risk management and promote it in home facilities.

The 5-day training was facilitated by Ms Oumou from the University of Minnesota supported by Mr. Albert Ndagijimana who was trained as a trainer by SANDIA.

Group discussions during the session
Trainees and trainers pose for photos with the Chairman One Health Steering Committee after closure of the training

Dr. Robert Kibuuka (OHCEA-RWANDA Focal Person) highlighting the workshop objectives

National Laboratories. Others who supported the training were Dr. Anselme Shyaka, School of Animal Sciences and Veterinary Medicine, College of Agriculture, Animal Sciences and Veterinary Medicine, and Dr. Ivan Mwikarago (Director of National Reference Laboratory). The training focused on the following topics:

1. Orientation to Bio-risk Management
2. Orientation to Bio-risk Management Evaluation
3. Biosafety risk Assessment evaluation
4. Laboratory Biosafety (PPE, decontamination, waste disposal, shipping)
5. Hazard and Risk communication in the laboratory
7. Bio-risk Mitigation Strategies and Mitigation control Measures
8. Good Laboratory work practices
9. Biosecurity risk Assessment

The Chairman of the Rwanda National One Health Steering Committee (Dr. Gafarasi Isidore), the Director of The Rwanda National Reference Laboratory and the Director of Wildlife at the Rwanda Development Board attended the entire training.

This first step of the two-step ToT, mainly focused on orientation to BRM. The second step will be consisting of training the already trained in-service providers from this session on how to deliver BRM training in the roll-out plan to cover other in-service providers. Also a tool will be developed to track the performance of the trainees in their work stations. An online course on Bio-risk Management will be developed.
Although Rwanda has been lucky that it has not yet experienced any outbreak of highly infectious diseases, there is no guarantee that it will never happen. Rwanda is a “hot spot” for emerging infectious diseases given that Rwanda shares borders with countries that have continuously had outbreaks of epidemic proportions such as Ebola, Yellow Fever, Rift Valley Fever, Foot and Mouth Disease, and given the high volumes of human traffic, animals and goods across land borders, the likelihood of an outbreak and spread of human and animal transmissible diseases from its neighbors is eminent with an expectation of significant public health implications in a country that so far has the highest population density in the world. Therefore, the need for developing a workforce capable of countering such human and animal disease threats is paramount. Given its mandate of building capacity for the future workforce, One Health Workforce project with the University of Rwanda, noted that there are still glaring gaps in as far as prevention, detection and response to infectious disease threats are concerned. Therefore a 5-day workshop on integration of content into the existing curricular from the infectious diseases module was organized at Tulip Hotel in Bugesera, 13th - 17th March 2017. Faculty came from the Veterinary, Nursing and Environmental health departments of the University of Rwanda. Tufts University and University of Minnesota provided technical support through Dr. Hellen Amuguni and Prof. Gregory Sales respectively.

Briefly the workshop focused on;
- Pre -survey and discussion on pre-survey/Expectations
- Introduction to OHW/goals objective/GHSA/IHR and PVS
- Add/Integrate One Health content into courses
- Add new/additional teaching methodologies
- Train faculty in use of additional teaching methodologies

Following this training, module leaders and Faculty agreed to integrate Infectious disease management modules into the different courses that they teach in their programs. They committed to change the way they have been teaching based on the new approaches they were exposed to. Below is a list of courses into which content was integrated:

**Environmental Health**
- Environmental Health Laws and regulations
- Management of Health services,
- Community Health Development
- Waste management and Research methodology

**Nursing courses**
- Community health nursing
- Community health in midwifery
- Tropical and communicable diseases

**Veterinary Medicine**
- Veterinary Public Health (II) and Food Safety
- General Pathology and Immunology
- Veterinary Microbiology
- Introduction to Animal Health
- Veterinary Clinics II

Trainees working in groups (Left) and individually on their courses (right) using flip charts
It is estimated that over 1,860 students from veterinary medicine, environmental health and nursing programs will be exposed to these modules at different levels of their study to gain skill, knowledge and other necessary competencies to be able to prevent, detect and respond to infectious disease outbreaks efficiently and in a timely manner in future.

During this workshop, participants worked both in groups and individually facilitated by the mentors.

Three technical support personnel from US University partners (Professor Greg Sales from University of Minnesota, Professor Diafuka SailaNgita and Professor Hellen Amuguni from Tufts University) facilitated and guided the groups.

Although University of Rwanda has been conducting an annual training on infectious disease management for final year students, this is not a sustainable approach, especially in the absence of donor funding. Having these modules incorporated and delivered to students through existing programs therefore, is a viable way of ensuring sustainability. It is easier and cheaper to deliver these modules to all the final year students this way than through the Infectious Diseases Management short course.

The training was wonderful and participants benefited a lot from it. There will be a survey after three month to compare the pre-survey and post-survey purposely to evaluate the level of knowledge and the level of effectiveness and the achievement of activity objectives.
February 2017, Mekelle University conducted training on Risk Analysis to in-service professionals both government and academia in Mekelle city. Risk Analysis was identified as a first priority during the training needs assessment conducted in year 1. In year 2, a ToT training was conducted for professionals from diverse sectors. In year 3, this training was cascaded to professionals working in different line ministries and academia. A total of sixty (60) professionals coming from Tigray Regional Health Bureau, Mekelle Zone Health Office, Tigray Health Research Institute, Field Epidemiology Professionals working in different areas (Tigray, Afar and Oromia region), Tigray Science and Technology Commission, Tigray Agriculture and Rural Development Bureau, College of Health Science, and College of Veterinary Medicine participated in the February 2017 training. Mr. Dejen Yemane and Dr. Tehtina facilitated the training sessions using the OHCEA-developed module on Risk Analysis. OHCEA Focal Persons; Dr. Gebretsadik Berhe and Dr. Berihun Afera, coordinated the process. The mode of delivery was through interactive group discussions, experience sharing and PowerPoint presentations. Training participants acquired knowledge and skill in identification, managing, prevention and communication of infectious disease risks using the OH approach. Participants acknowledged the importance of One Health approach in solving complex health problems including infectious disease threats.
OHCEA in Tanzania Engages relevant Ministries and Authorities Responsible for Training One Health Workforce at Diploma and Certificate levels in Tanzania

Engagement of OHCEA universities with relevant ministries and authorities responsible for training OHW at certificate and diploma levels has been planned after realizing that OHCEA has done a significant contribution on creating awareness about one health at undergraduate and postgraduate levels. However, in Tanzania the workforce at the grass root level is largely composed of non-degree graduates. The meeting aimed to deliberate on how to integrate One Health modules/materials into their curricula.

The goal of the meeting was creating space for engagement between OHCEA universities (SUA & MUHAS), Prime Minister’s Office – One Health Coordinating Unit (PMO-OHCU), Ministry of Agriculture, Livestock and Fisheries (MALF), Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDGEC), Institute of Allied Health Sciences, Pasiansi and Mweka Wildlife Training Institutes, Livestock Training Agency (LITA) Morogoro Campus, Sokoine University of Agriculture (SUA), Tanzania Public Health Association (TPHA), National Environment Management Council (NEMC), Tanzania, Veterinary Association and Tanzania Nurses and Midwives Council.

OHCEA universities (SUA & MUHAS) and the relevant ministries and authorities responsible for training One Health Workforce at certificate and diploma levels.

Specifically, the meeting objectives were; 1) to identify modules/topics to be introduced into certificated and diploma training curricula, and 2) to discuss modalities for integrating One Health materials into their curricula.

The heads of institutes offering certificate and diploma in human, livestock and wildlife studies attended the meeting. These were from National Council for Technical Education (NACTE), Muhimbili University of Health and Allied Sciences (MUHAS), Prime Minister’s Office – One Health Coordinating Unit (PMO-OHCU), Ministry of Agriculture, Livestock and Fisheries (MALF), Ministry of Health, Community Development, Gender, Elderly and Children (MOHCDGEC), Institute of Allied Health Sciences, Pasiansi and Mweka Wildlife Training Institutes, Livestock Training Agency (LITA) Morogoro Campus, Sokoine University of Agriculture (SUA), Tanzania Public Health Association (TPHA), National Environment Management Council (NEMC), Tanzania, Veterinary Association and Tanzania Nurses and Midwives Council.

The meeting was held at Giraffe Ocean View Hotel in Dar es Salaam, 6 – 7 April, 2017. Thirty six (36) participants attended in total. The meeting was held with the expectation of coming up with agreed modalities on how to integrate One Health modules into the non-degree training curricula.

The meeting participants were sensitized and agreed that knowledge, skills and attitude on OH approaches are important in the training of certificate and diploma level students in the human, animal health and environment sectors, 2) Relevant modules/topics to be introduced into certificated and diploma training curricula identified, 3) Agreed on modalities for integrating One Health modules on into certificate and diploma level curricula, 4) Meeting participants also agreed on a framework for integrating the modules in the curricula.

Majority of the participants found the meeting useful and strongly agreed that it was relevant to their work. Many committed to share with colleagues and supervisors what they learnt in the meeting, particularly the key concepts in One Health domain. “The concept of One Health is very important as it will help to combat diseases”, one said. “One Health needs to be incorporated in the existing curricular and NOT to change curricula”, yet another one cautioned.

Some were very specific on this matter though. “Curricular for nursing and midwifery training need review for inclusion of One Health approach”.

Meeting participants also agreed on a framework for integrating the modules in the curricula.

OHCEA News
Increasing enrollment in universities and the limited available resources and infrastructure for adequate training in health-related subjects have made it difficult for students to practice using the One Health approach upon graduation. OHCEA has provided opportunities for these students to practice One Health approaches through the USAID OHW project whereby modules on infectious disease prevention, detection, and response are being provided to students outside class hours until such time they can be incorporated into their regular curriculums. The modules include practicums in the field where human health students, animal health students and environmental students work together to solve complex problems facing populations living in geographical hot-spots for EPTs.

OHCEA Tanzania organized a training for undergraduate students using One Health Modules at Sokoine University of Agriculture. The training was held 27th February – 4th March 2017 at SUA campus. The purpose of the training was to equip Bsc. students with knowledge and skills on how to translate theory into practice to enable them to prevent, detect, and respond to infectious diseases outbreaks; as well as to combat health challenges, such as the emerging public health non-infectious issues like AMR and Endocrine Disruptors. The long-term strategy of this training is to equip students with OH concepts and practices in the short-term while plans are underway to incorporate OH modules into their regular curriculums. During the training, 64 future OHW undergraduates at the BSc level at SUA were trained by offering OH modules for 30 hours (10 hours per module) taught for 6 days. The course was taught by 9 instructors from SUA and MUHAS.

The objectives of the training were well-fulfilled. The trainees (BSc students) as the One Health Work Force positively received the training and promised to make use of what they learnt during the six days training. They were all happy to be enlightened on Concepts of One Health, One Health Competencies and Domains. The approaches on infectious disease detection, prevention, and response; zoonotic diseases; and solving problems like Antimicrobial Resistance and Endocrine Disruptors using One Health approach were well received by the students.

One lesson learned is that students at BSc level are eager to use One Health approach in solving different health problems in animals, humans and environment. Such training have to be conducted on annual basis and to make them sustainable, the module have to be incorporated in the undergraduate curricula.

Participants gained knowledge, specifically in the use of One Health approach in prevention, control and eradication of diseases, Risk Analysis Framework (Risk Assessment, Risk Communication and Risk Management) with the focus on Emerging Pandemic Threats (EPT) zoonotic diseases, emerging public health non-infectious issues like AMR, Endocrine Disruptors. In addition, participants were exposed to detailed coverage on Risk Communication, Leadership skills, Skills for building interdisciplinary teams and Communication skills.

Most of the participants will work as veterinary doctors, livestock officers and some of them as wildlife officers and teachers, upon graduation. These will be the champions of One Health in their respective fields.
On 16th January 2017, the Ministry of Health of Uganda declared an outbreak of Highly Pathogenic Avian Influenza, HPAI (H5N1) that was later confirmed to be H5N8. On January 2nd, 2017, Uganda Wild Life Education Center (UWEC) in Entebbe received reports from fishermen about the massive death of wild birds (White Winged Black Terns) at Lutembe bay in Wakiso district. The Zoonotic Disease Coordination Office (ZDCO) was alerted on January 3rd, 2017. On January 5th, 2017 a multi-sectoral team from the Ministry of Health (MoH), Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), Ministry of Water and Environment, Ministry of Internal Affairs, Government Analytical Laboratory, Uganda Wildlife Authority, Makerere University Walter Reed Project and UWEC visited the suspected areas. The objective was to establish the magnitude of the problem, affected species, cause of death and to collect samples for laboratory analysis.

More reports came in about death of wild birds and poultry in Masaka district. Carcasses of the wild birds from both Masaka and Wakiso were delivered to the National Animal Disease Diagnostic and Epidemiology Center (NADDEC) and Uganda Virus Research Institute (UVRI) in Entebbe and all were positive for Highly Pathogenic Avian Influenza (HPAI). However, the outbreak was later confirmed to be H5N8 and an outbreak of HPAI (H5N8) was declared on 30th January 2017.

In order to offer support to field teams and also train students through experiential learning, on the 26th of January 2017 Makerere University sent out a multidisciplinary team of students to conduct a risk assessment of the HPAI problem in suspected districts using a one health approach. Students acquired skills in outbreak planning, community mobilization and sensitization, alerts investigation, PPE donning and doffing and reporting and communication.

The students who participated include;
1. Obwoya Jimmy - Veterinary Medicine (Undergraduate)
2. Jonah Ainembabazi - Law
3. Kizito Kakule - Wild Life Health & Management (MSc)
4. Atianjoh Walters Asonoh-Veterinary Preventive Medicine (Msc)
5. Ekuka Godfrey-Infectious Disease Management (Msc)
6. Mawejje Charles-Public Health
7. Namata Jessica - Public Health

The students were supervised by Makerere University faculty and other experts from Ministry of Health National One Health Platform. They included; Dr. Musa Sekamatte, Ms. Edwinah Atusingwize, Dr. Kato Charles Drago.

The key achievements are highlighted under each theme as here below;

**Participation in stakeholders planning meetings:** The One Health club students had the opportunity to participate in stakeholders planning meetings in Nakasongola district. These meetings were attended by multidisciplinary teams that were key at different levels of the outbreak investigation. The team comprised members from UWEC, UVRI, NADDEC, MAAIF, MOH, farmers, fishermen, the police and poultry product traders. Students appreciated the diverse roles of multidisciplinary teams during disease outbreak investigation.

**Socio mobilization, sensitization and disease impact assessment:** Students participated in community activities across the different
districts. The team sensitized the community on how to discard/deal with the carcasses of the birds and other sick domestic birds. Through this activity, students acquired skills in community entry, dialogue, situation analysis, history taking and gained experience of working in hard-to-reach areas.

**Risk factor assessment:** The students participated in interviewing key members in the community so as to investigate the risk factors to the outbreak. The team visited a number of sites that had reported death of wild birds and on investigation especially in Nakasongola found that birds had died of other causes related to mining. This training was important to equip students with skills in investigation of outbreak alerts and advising the relevant ministries.

**Use of protective gear (PPE) during sample collection:** The students also received training in donning and doffing of Personal Protective Equipment (PPE) that was a must before any sample collection could be done. The students were also trained in the preparation of disinfectants for field use.

Ethiopia has prioritized five zoonotic diseases namely; Rabies, Echinococcus, Anthrax, Brucellosis and Leptospirosis. These diseases are common in all parts of the country where Tigray is one of the regions with high burden, affecting the population; mainly school children less than 15 years of age. The region is also characterized by high prevalence of rabies compared to the other parts of the region within Ethiopia.

Understanding that the disease is a priority in Ethiopian, Mekelle University organised community outreach programs mainly focused on the most vulnerable groups. These community outreach programs were focused on prevention, detection and response to infectious diseases mainly rabies and
brucellosis, targeting around 2000 elementary and high school students of Aynalem and Ayder. The community outreach programs were conducted by 50 multidisciplinary students from the College of Health Sciences and Veterinary Medicine under supervision of 4 faculty and the OHCEA Focal Persons. The disciplines that participated in the outreach programs included; medicine, nursing, environmental health, public health, midwifery, and veterinary medicine. During the outreach programs, face-to-face education of elementary school students was conducted in their classrooms. At the same time, mass education for high school students was also provided in two schools in Mekelle city. During the outreach programs, students acquired the required knowledge and skills on the detection, prevention and control of rabies and brucellosis. In addition, the community outreach programs were an excellent experiential learning opportunity for the students and faculty from the different disciplines of the College of Health Sciences and the College of Veterinary Medicine of Mekelle University.
A team of thirty (30) students, accompanied by Prof Malang Seydi, Hygiene and Food Quality Specialist, conducted a sensitization visit to practitioners on hygiene and the risk of collective food poisoning. The students came from the School of Interstate Science and Veterinary Medicine (EISMV), Faculty of Medicine, Pharmacy and Dentistry (OPCF), the Institute of Sciences of the Environment (ISE) and many other faculties of the University Cheick Anta Diop (UCAD).

In the SELF Restaurant and CLAUDEL Restaurant, all the staff and students were sensitized on issues of hygiene and catering. The causes of collective food poisoning and prevention measures were developed by Prof Malang Seydi. The approach was practical: tour of the premises, counting of strong points and weak points and proposal of improvement measures.

The One Health Student Innovations Club (OHSIC) handed over to the heads of the 2 restaurants posters to raise awareness about hygiene management and food safety. They welcomed the approach of students engaging in such issues. The representative of the Manager of CLAUDEL restaurant, Mr Faye said that, “this visit has been enriching given that in catering services, the first rule is hygiene”.

This visit was conducted within a One Health multidisciplinary framework, bringing together students and faculty from different disciplines.
In Uganda, most households own pets especially dogs and cats which are used for security and vermin control respectively. However, most pet owners are not aware of rabies; its transmission and first Aid in case bitten by dogs or cats. A group of undergraduate students at Makerere University School of Public Health (MakSPH), organised an awareness campaign on rabies, as one of the activities worldwide to mark One Health Day 2016. This awareness campaign took place at St. Noah Girls Secondary School, Zana. The event aimed at creating awareness on rabies transmission, first aid and treatment. Permission to talk to the students was obtained through the School Headmaster.

Before the talk with the secondary school students, the MakSPH students administered a pre-test on rabies where levels of knowledge were assessed and later held discussions with the students about rabies after which a post-test was administered.

The students entered their activity in the One Health Day Students’ Competition organised by the One Health Commission, the One Health Initiative and the One Health Platform Foundation.

Gloria Tumukunde (BEHS, Yr3), Apio Fiona (BEHS Yr3), Prossy Nakitto (BEHS Yr3), Semyalo Joshua (B. Animal Production and Technology, Yr3) and Mayindi Frank (MBChB Yr3) form the winning team.

For their effort in mobilising for the rabies campaign, the students won the One Health Day Planning Team Special Recognition Award, alongside University of Pretoria, South Africa. The recognition comes with USD 500 cash prize.

**What was the most striking personal and group experience?**

**Phionah:** While we were doing our work, we realised that many people didn’t know much about rabies; they didn’t know about vaccination against rabies. Yet many of them keep cats and dogs in their homes. A few reported that they vaccinate their animals but not routinely. We also realised how much One Health talk is confined to the Universities, we need to take it out to other communities.

**Gloria:** We found out that first aid for dog and cat bites is not known yet it is a cheap technique. When we told them that recommended first aid is washing the wound with water and soap, they reacted like we were telling them something out of this world.

**Prossy:** Many times we assume that people have information and know certain things, yet they do not know. It is assumed, for instance, that secondary school students have information about a lot of things, but during this activity, we were able to observe the knowledge gaps.

**Gloria:** We learnt a lot from each other. We realised that we all - in our various disciplines- know one component of the disease; some know a lot about treatment and medication, some know first aid, others know disease incubation period, etc. So when we came together to work on this activity, we realised that we were all pooling our knowledge and skills together to successfully conduct the activity.

**Prossy:** Being a part of the activity, showed me the importance of working together. I realised that as environmental health scientists, we are very key in health education and awareness creation, while the veterinarians know a lot about the incubation of the disease and the medical students are good when it comes to treatment.
Tell me about the award; how do you feel about being among the winners?

**Gloria:** The award makes me feel very confident; it is international recognition of our work. It makes me feel I can actually take on greater challenges in One Health. If there is another opportunity, trust me I would go grab it with both hands.

**Prossy:** It came as a surprise but to me it is more than the money. Everyone in class is amazed by the news. Everybody is asking us how we pulled it off. The fact that we were able to pull this off without much resources is such a good feeling.

**Phionah:** This was a global competition and out of all the many entries, we got recognition which is more than the money really.

What are your perspectives on the One Health approach to training?

**Prossy:** I have studied in other institutions before at Certificate and Diploma levels, but this is my first time to encounter One Health. I think if more attention is given to it, especially in training and at community level, it can lead to control of numerous disease conditions.

**Gloria:** It provides all-round training which is what the world needs currently.

**Phionah:** It should be included in all curricula across the university and it should be spread to other universities in the country. Currently it is only Makerere University where the One Health concept and approach is being practiced, as far as I know.
Jimma University faculty from School of Veterinary Medicine & Faculty of Public Health investigate an outbreak in West Wollega, Oromia region

Between March 17th – 20th 2017, OHCEA faculty from Jimma University investigated and responded to an unknown disease outbreak in Horro Haleltu Kebelle, Guto Gida District in East Wollega, Oromia regional state of Ethiopia. A team of 6 faculty members, including a clinician, epidemiologist and veterinarians, from both School of Public Health and Veterinary Medicine responded to this outbreak after a report indicating that 5 people out of 45 people who had eaten a wild boar had died. The purpose of the investigation was to identify the causative agent of the outbreak that first occurred on 24 December 2016 and to conduct a community sensitization on potential diseases that could be transmitted from animals to humans. The team prepared and used a structured questionnaire to assess the problem & based on the collected information, the team categorized the people who had eaten the wild boar into three groups; those who consumed raw meat, those who ate partially dry meat and those who cooked “Wati”. Those who consumed raw meat were seriously sick, while those who consumed partially dry meat were mildly sick and those who consumed cooked “Wati” partially healthy. The common clinical signs seen in the patients were pain around umbilicus, diarrhea, nausea, vomiting, generalized weakness & stiffness of the legs. A 14-year-old, hospitalized in Jimma Specialized Hospital died from what was first suspected to be Anthrax but didn’t respond to treatment. One other patient travelled back from Jimma Specialized Hospital to Nekemte Hospital after failing to respond to Anthrax treatment. While at Nekemte Hospital, suspected Brucellosis (didn’t respond to treatment) and Trichinellosis were suspected and patient subjected to Mebendazole and prednisolone treatment. The patient responded to the latter suspected disease treatment. Supportive treatment was provided. Based on the above clinical signs, treatment behaviours and loss of lives, the team reported to the President of Jimma University on 23 March 2017. The President reached out to the President of Oromia requesting for collaboration in managing the problem in the community. This problem occurred before in 1982 E.C and 1984 E.C where people died from eating raw wild boar meat. On March 19th, the OHCEA team went out to the community to conduct sensitization on how to prevent disease transmission from animals to humans. The sensitization was attended by 89 community members.

Community members interact with faculty from Jimma University during the sensitisation

Jimma University One Health Students’ Innovations Club Conducts Case Competitions on Brucellosis

One of the most vibrant components of the One Health Workforce (OHW) project in Ethiopia is the One Health Students’ Innovations Club. OHCEA Ethiopia has a strong population of students from different disciplines who form the One Health Students’ Innovations Club (OHSIC). In Jimma University, the OHSIC has more than 330 members who have participated in promoting multidisciplinary collaboration. They have shared ideas on One Health through community outreaches and in-class activities. One major activity conducted in Jimma; that brought together 282 students, is the Case Competition on infectious diseases conducted on 28th January 2017. Students from veterinary medicine, animal science, public health, pharmacy, nursing, environmental health, human medicine, midwifery and agriculture were involved in this
Jimma University One Health Students’ Innovations Club Conducts Case Competitions on Brucellosis

vibrant session. These students competed, by sharing with the rest of the students, case studies on how Brucellosis is transmitted, managed and controlled in different communities. This type of competition helps students to develop analytical skills in management of infectious diseases.

The case competition was between two teams; where each team was constituted by three students. Each team had senior students from different departments of both public health & veterinary medicine to form a one health team spirit. The competing students were specifically from Veterinary Medicine, environmental health, medicine and Pharmacy. The contest had three judges; academic staff recognized for their expertise on the topic, coming from three different departments (Veterinary Medicine, public health and Health service management). The case competitions focused on brucellosis, one of the priority zoonotic diseases in Ethiopia. The case competition was started by providing orientation on the entire competition procedure (timing, key points that needed to be mentioned about the disease, evaluation scale on each point, roles of the judges and the audience) to both competing students and the audience. Accordingly, the two groups of contestants were given initially ten minutes to pitch about the disease. Another 5 minutes were given to each group to add points which they feel were important but not mentioned in the first ten minutes about the disease. At last, another 10 minutes were given to each team to take and respond to questions raised from the opponent group, the audience and the judges.

Finally, the judges announced the results of each group following pre-determined evaluation criteria and the winning group was declared. Each member of the winning team was awarded a certificate of appreciation and a laptop bag. Members of the second team were each given a certificate and a flash disk.

Finally, a very interesting and educational poem composed by Haileyesus Terefa (6th-year Veterinary student) and Atseda Melashu (3rd-year Post-harvest management department) was presented. The poem was about the importance and philosophy of one health approach to effectively address global health challenges.