

**University of Gondar**  
**The Ohio State University**  
*WOAH Veterinary Education Twinning Program*

# **UoG-OSU WOAH TWINNING**

# **FINAL**

# **TECHNICAL**

# **REPORT**

## **2015 - 2022**



College of Veterinary Medicine  
&  
Animal Sciences



**THE OHIO STATE  
UNIVERSITY**

COLLEGE OF  
VETERINARY MEDICINE



World Organisation  
for Animal Health  
Founded as OIE



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# ACKNOWLEDGEMENTS



## To UoG Faculty and Stakeholders

## To OSU administrators, instructors, and staff

## The UoG-OSU Twinning Team Members & Collaborators

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**And the final recognition goes to the local leadership at the UoG College of Veterinary Medicine and Animal Sciences: Drs. Tsegaw Fentie, Achenef Melaku, Seleshe Nigatu, and Shimelis Nigatu,** who without their consistent effort and determination none of these activities would have been possible. Effort that took place under incredible difficult circumstances and major challenges at the country and university level, including political and social conflicts and a global pandemic. Circumstances under which others would have quit, they endure and successfully drove change not only in their college but across their country educational system. They are indeed model citizens of the veterinary profession in Ethiopia.

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# INTRODUCTION

In 2015, when the University of Gondar – The Ohio State University WOAHH Twinning program was launched, it had a very specific agenda containing four specific interconnected objectives:

## Aim 1

**Strengthen Ethiopia's Veterinary Services by aligning the DVM curriculum with the WOAHH Day 1 Veterinary Competencies and WOAHH guidelines on Veterinary Education Core Curriculum**

**Develop a uniformed assessment tool to identify training gaps in veterinary education**

## Aim 2

## Aim 3

**Increase the number of competent, newly trained veterinarians whose education fulfil the WOAHH Day 1 Competencies to promote and protect the health of people, animals, and the environment**

**Provide continuing education and professional development opportunities to improve the current veterinary workforce**

## Aim 4

### Aim 1

The first objective was accomplished by first developing an *Assessment and Implementation of Day 1 Competencies (AID-1C)* methodology to assess the University of Gondar – College of Veterinary Medicine and Animal Sciences (UoG-CVMAS) veterinary degree program curricula and their teaching capacity in relation to the WOAHH's Day 1 Competencies and Veterinary Education Core Curriculum. Second, by prioritizing identified gaps and weaknesses in the UoG-CVMAS veterinary curriculum, pedagogy, and other academic areas to help create a comprehensive *Action Plan* to best address these problematic areas. And third, by developing courses, pedagogical tools, and training programs to fulfill Day 1 Competencies in the newly harmonized UoG veterinary Curriculum. This process resulted in the 2017 launching of a new veterinary curriculum that was harmonized with the WOAHH Day 1 Competencies and WOAHH Veterinary Education Core

Curriculum. This new curriculum was the first of its kind, not only in Ethiopia, but in Africa (<https://doi.org/10.3138/jvme-2019-0115>). This innovated curriculum went on to serve as the benchmark model for the new Ethiopian National Veterinary Curriculum, which was approved for use throughout the country in 2020. **Today, all veterinary schools in Ethiopia are implementing the 2020 nationally harmonized curriculum fully aligned with the WOAHA Day 1 competencies, which was based on the UoG-OSU WOAHA Twinning Program assessment and experience.**

## Aim 2

Aim 2 was accomplished by designing a customized *Evaluation Tool* to evaluate all 19 WOAHA Day 1 Competencies and 156 related Topics and Themes to help identify specific gaps and deficiencies. This tool not only helped to evaluate and revise the UoG-CVMAS Curriculum, but this tool is now an integral part of the AID-1C methodology, which guides veterinary schools through the process of assessing their program based on the WOAHA guidance documents on veterinary education. This methodology is currently being applied in Southeast Asia. This experience was presented and shared to Indian Veterinary Education Establishments (VEEs) in a virtual workshop, 7- 9 June 2021. In June 2022, representatives from 37 SE Asian veterinary schools were trained on the AID-1C methodology. The workshops occurred in three countries (Cambodia, Thailand, and Philippines), with eight countries participating and over 70 participants representing 37 VEEs in Southeast Asia. In October 2022, the first three SE Asian veterinary schools performed their own curriculum assessments using the AID-1C methodology as did the UoG. This example clearly showcases the success of this aim not only in Ethiopia but also by showing the global impact of the Twinning program.

## Aim 3

The third aim began once the new veterinary curriculum at the UoG-CVMAS was launched in 2017, a curriculum which was fully harmonized with the WOAHA Day 1 Competencies and WOAHA Veterinary Education Core Curriculum. Today, several hundred veterinary students have graduated from the University of Gondar who are well-trained to promote and protect the health of people, animals, and the environment, and ready to support the veterinary services of Ethiopia, which is also in line with aim 1. These students graduated with a higher-grade point average (GPA) than the students from previous years, and over 60% of the graduates under the new curriculum secured job within 6 months of graduation in veterinary medicine.

## Aim 4

This final aim was achieved by first implementing a *Faculty and Student Exchange program* for training, collaborative research, and educational material development during the length of the Twinning program; second, by delivering multiple continuing education and professional training programs to support the activities highlighted in the Action Plan (including a total of 6 CE courses and over 150 trainees); third, by participating in multiple cross-twinning workshops to promote

the educational model, the experience, and expertise gained at the UoG. Through the WOAHA/OIE Twinning program, we successfully implemented 6 different continuing education courses with multiple editions over the years that provided advanced training for over 150 academic staff from the UoG and other Ethiopian veterinary schools, as well as representatives from different government agencies and practicing veterinarians. The impact of these trainings extended well beyond the University of Gondar as one in four continuing education participants were from other academic institutions and veterinary schools across Ethiopia.

All major documents and annual reports explaining the most relevant activities performed during the UoG-OSU WOAHA Twinning program in detail can be found at [this link](#), and a timeline describing the process over time and the major impacts can be observed on the next pages.

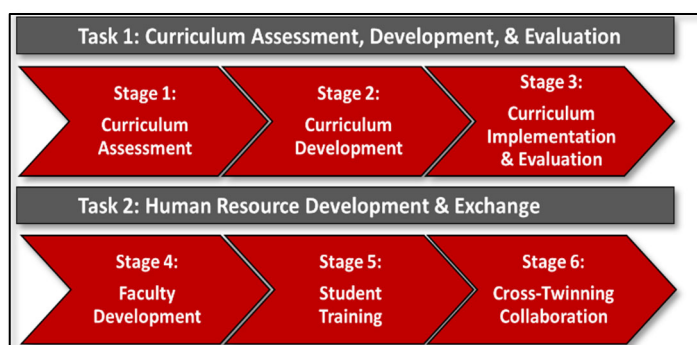
**In conclusion, this Twinning program has been incredibly successful in promoting WOAHA Day 1 Competencies to improve the quality of veterinary education in Ethiopia by helping to produce young veterinary professionals that are better prepared to serve in their country's veterinary services.**





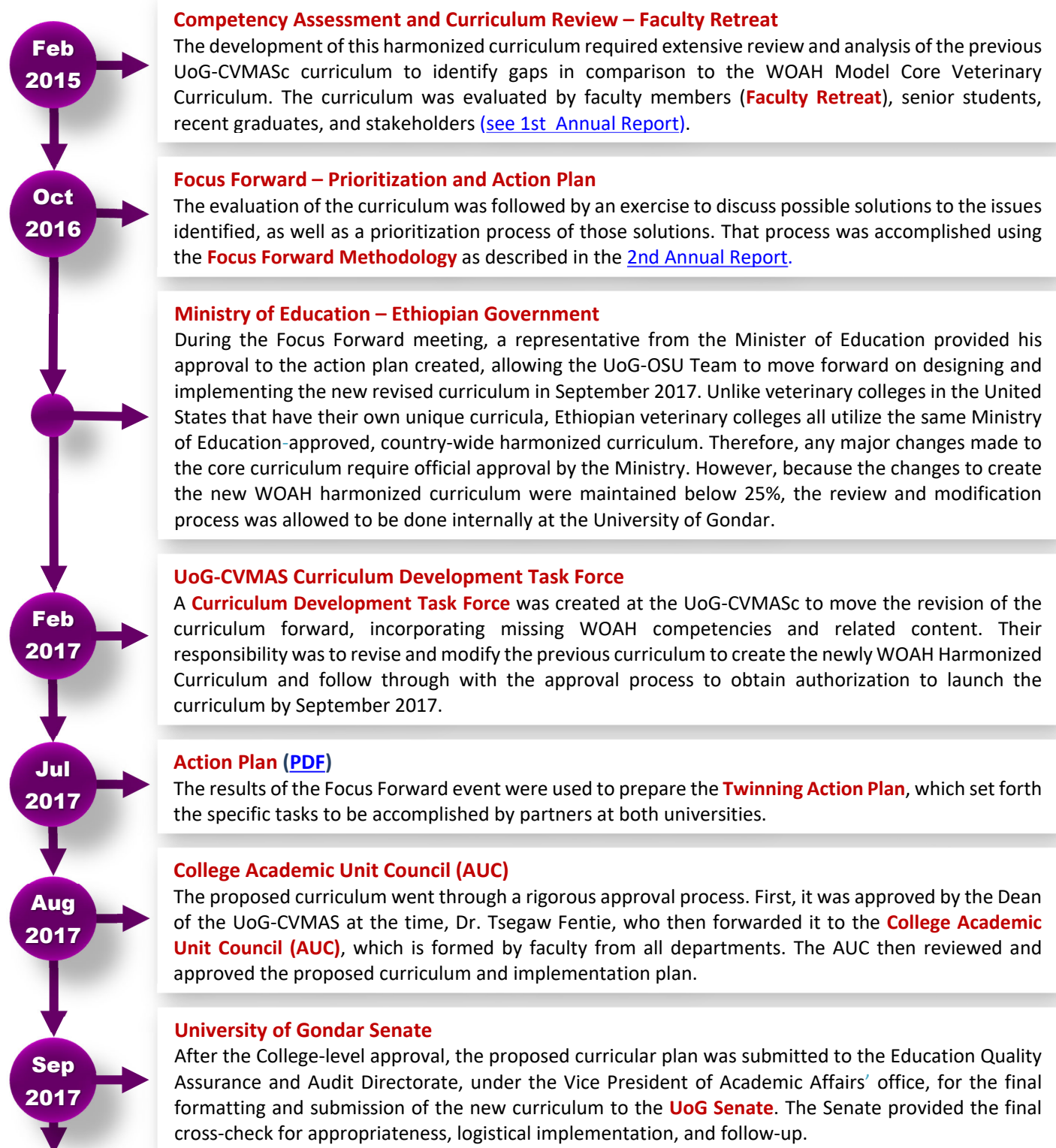
# WORKING PLAN

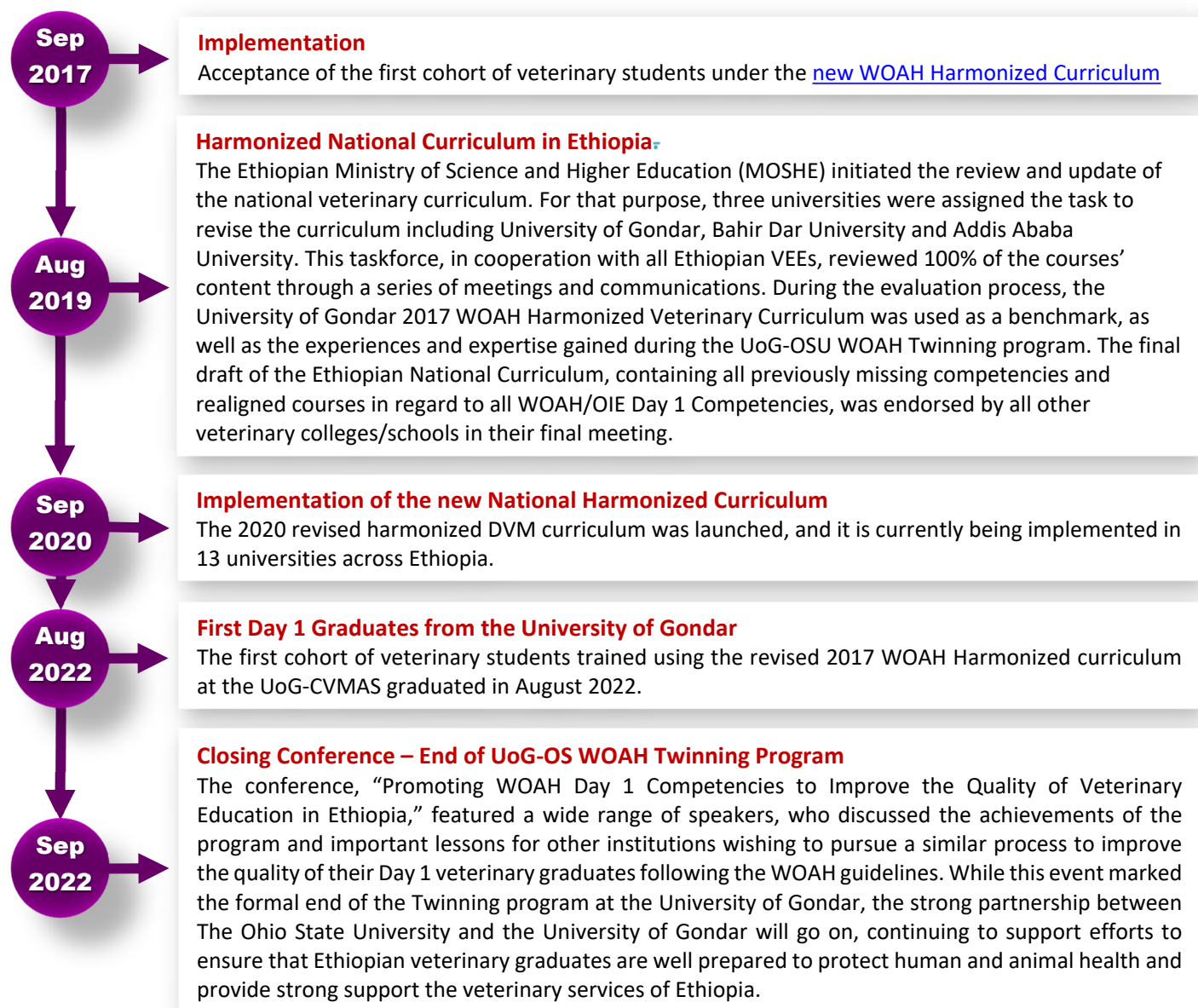
The work plan was originally divided into two main tasks that were undertaken simultaneously as shown in the figure. *Task 1, Curriculum Assessment, Development, and Evaluation* was broken into three stages that were addressed in sequence. *Task 2, Human Resource Development and Exchange* consisted of three stages that were also run simultaneously with Task 1.



WORKING PLAN	STATUS
Activity 1.1: Faculty Retreat Task 1, Stage 1: Curriculum Assessment	COMPLETED
Activity 1.2: Site Visit, One Health Summer Institute, & CE Courses Task 1, Stage 1: Curriculum Assessment Task 2, Stage 4: Faculty Development Task 2, Stage 5: Student Training	COMPLETED
Activity 1.3: Cross-Twinning Meeting Task 2, Stage 6: Cross Twinning Collaboration	COMPLETED
Activity 1.4: Focus Forward, Action Plan and Educational Material Development Task 1, Stage 2: Curriculum Development	COMPLETED
Activity 1.5: UoG Faculty Development and On-site Training Task 1, Stage 2: Curriculum Development Task 2, Stage 4: Faculty Development	COMPLETED
Activity 2.1: UoG Faculty Development and On-site Training Task 1, Stage 2: Curriculum Development Task 2, Stage 4: Faculty Development	PARTIALLY COMPLETED
Activity 2.2: One Health Summer Institute & Continuing Education Courses Task 2, Stage 4: Faculty Development Task 2, Stage 5: Student Training	COMPLETED
Activity 2.3: VPM Rotation & Farm to Table-Ohio Task 2, Stage 5: Student Training	COMPLETED
Activity 3.1: VPM Rotation & Farm to Table-Ohio Task 2, Stage 5: Student Training	COMPLETED
Activity 3.2: One Health Summer Institute & Continuing Education Courses Task 2, Stage 4: Faculty Development	PARTIALLY COMPLETED
Activity 3.3: Closing Workshop Task 1, Stage 3: Curriculum Implementation	COMPLETED
Activity 3.4: Cross-Twinning Meeting Task 2, Stage 6: Cross-Twinning Collaboration	COMPLETED

# IMPLEMENTATION TIMELINE



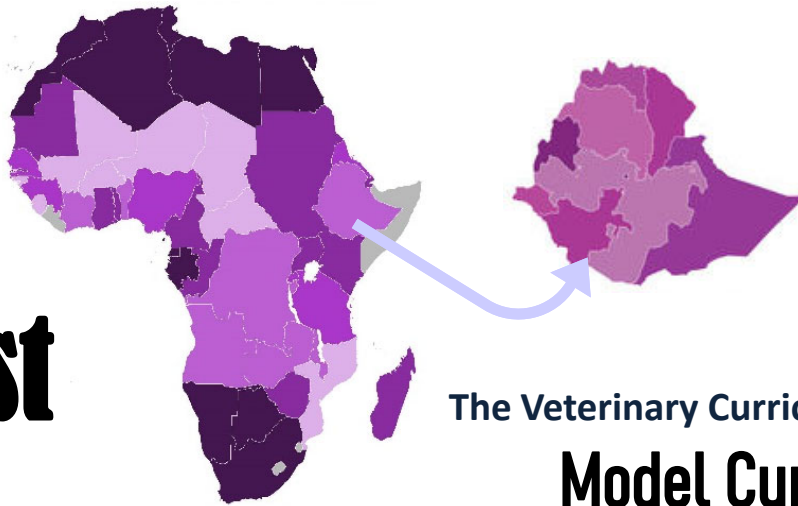




# University of Gondar - The Ohio State University WOAH/OIE Veterinary Education Twinning Program Major Accomplishments 2015 - 2022

# 1<sup>st</sup>

World Organization for  
Animal Health  
(WOAH/OIE) Harmonized  
Veterinary Curriculum  
implemented in Africa,  
launched in 2017



The Veterinary Curriculum at the UoG was used as the  
**Model Curriculum in Ethiopia**

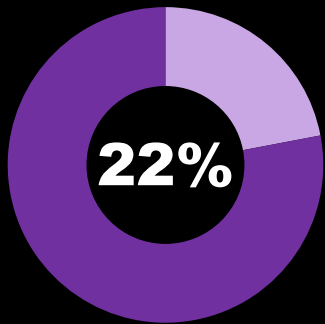
and as a benchmark to create the 2020 National  
Veterinary Curriculum currently being  
implemented across the country

# All 13

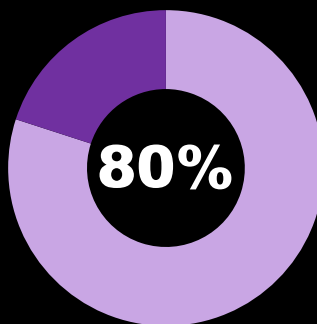
veterinary schools in Ethiopia  
have participated in one or  
more of the WOAH Twinning  
activities

# >300

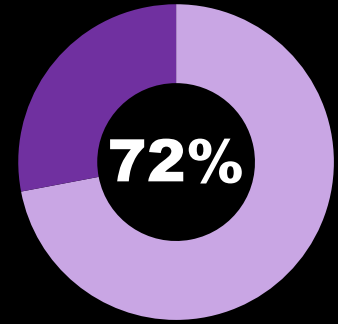
future veterinarians have started under the  
newly WOAH harmonized curriculum at the UoG  
College of Veterinary Medicine and Animal  
Sciences (UoG-CVMASc)



of Courses in the  
UoG-CVMASc Curriculum  
were modified to fulfill  
WOAH Day 1 Competencies



of the Faculty at the UoG-  
CVMASc have obtained  
certification on Teaching  
Methodology and Pedagogy



of the students had  
participated in Veterinary  
Clubs created under the  
WOAH Twinning program



# 150

Academic Staff from the UoG and other  
universities have been trained in 6 CE  
courses sponsored by the WOAH/OIE  
Twinning program focused on Day 1 Topics

# 25%

of CE course participants were from other  
academic institutions and veterinary  
schools across Ethiopia

# 16

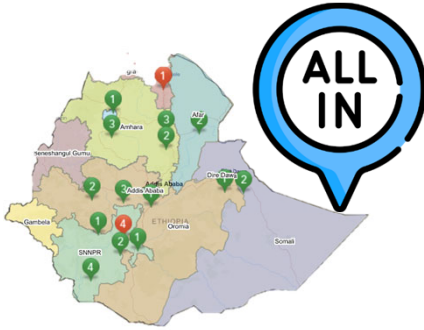


UoG Veterinary students  
participated in the  
Veterinary Preventive  
Medicine Rotation in Ohio

# University of Gondar - The Ohio State University

## WOAH/OIE Veterinary Education Twinning Program

### Major Accomplishments 2015 - 2022



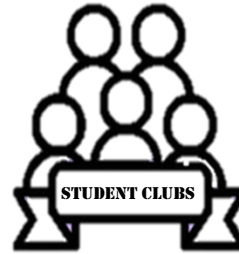
All veterinary schools in Ethiopia are implementing the 2020 nationally harmonized curriculum fully aligned with the WOAH Day 1 competencies, which was based on the UoG-OSU WOAH Twinning program assessment and experience

## 5<sup>th</sup>/6<sup>th</sup> year

UoG- CVMAS off-campus rotations were revised to address WOAH Day 1 Competencies

# 100%

of the content associated to WOAH Day 1 Specific Competencies was incorporated in courses throughout the UoG-CVMAS harmonized veterinary curriculum



# 3 new

veterinary students' clubs were created under the Twinning program to help increase student motivation

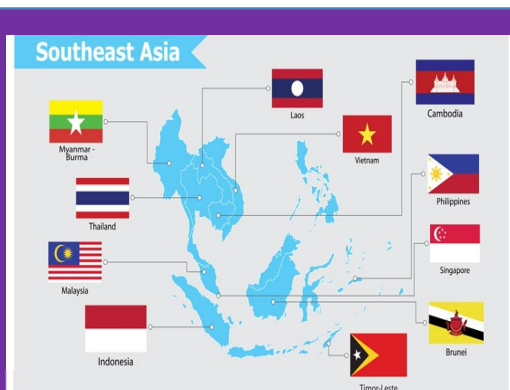
>70% of the current students at the UoG-CVMAS participate in at least one of these 3 clubs

**1 in 3** of the veterinary students that participated in the Twinning Exchange Program were recruited as faculty/instructors in Ethiopians Veterinary Education Establishments



National and Regional Government officials, as well as prominent veterinarians from the private sector, have increased their direct involvement in the education and training at the UoG-CVMAS

## Global Impact – SE Asia Expansion



The *Assessment and Implementation of Day 1 Competencies (AID-1C)* methodology has been endorsed by the ASEAN Veterinary Statutory Body Network as a mechanism to implement a minimum accreditation standard based on the WOAH Day 1 competencies



# 37

representatives from SE Asia veterinary schools were trained (June 2022) on the AID-1C methodology developed and tested in Ethiopia

**3** assessment workshops took place in Thailand, Philippines, and Cambodia (Oct 2022), in which over **273** participants were involved in the evaluation and **38** Veterinary Education Establishments from eight countries participated as observers

# TECHNICAL REPORT

The final *UoG-OSU WOAHA Twinning Technical Report* summarizes all of the major activities and subactivities that were designed to address the prioritized gaps and deficiencies identified during the curriculum assessment and evaluation of the UoG-CVMAS veterinary curriculum and that supported all the action described in the introduction. These activities not only reflected the possible solutions recommended and prioritized by the participants during the Focus Forward event (methodology that was described in the [2nd Annual Report](#)), but also the conclusions of multiple meetings among the partners of this Twinning program. **This report contained a total of 50 activities and subactivities that were planned to address the issues identified. In total, 84% (42/50) of the activities were fully executed as planned or beyond the original expectations. On the other hand, 16% (8/50) of activities were not able to be executed or were partially executed.** The specific details of each activity performed or implemented, in alignment with identified gaps or weakness that was planned to address during the Twinning program, are provided here. In addition, further details of the activities and their impact are summarized in the *UoG-OSU Twinning Program Closing Conference Proceedings: Promoting WOAHA Day 1 Competencies to Improve the Quality of Veterinary Education in Ethiopia*, attached in this document.

Although this technical report represents the formal end of this Twinning program, the strong partnership between The Ohio State University and the University of Gondar will go on, continuing to support efforts to ensure that Ethiopian veterinary graduates are well prepared to protect human and animal health and provide strong support the veterinary services of the nation. For example, in June 2022, we successfully launched the “Needs Assessment Survey for Implementing the 2020 Nationally WOAHA/OIE Harmonized Veterinary Curriculum in Ethiopia” in partnership with the UoG-CVMAS. The survey is the first step in a two-step process consisting of 1) a survey of all veterinary colleges in Ethiopia to identify the challenges that they face in implementing the new 2020 national curriculum and 2) an in-person workshop to share results and prioritize viable solutions using the Focus Forward methodology. The results of the Needs Assessment will be used to inform the national strategy to support all Ethiopian veterinary colleges in effectively implementing the new national curriculum harmonized with the WOAHA Day 1 Competencies.

The main objectives of the UoG-OSU Twinning program were to 1) Strengthen Ethiopia’s Veterinary Services, 2) Develop a standardized assessment methodology, 3) Increase the number of competent, newly trained veterinarians, and 4) Provide continuing education and professional development opportunities to help keep improving the current veterinary workforce in Ethiopia. **We can say without doubt we accomplished those objectives and more.** However, much work remains to be done, and we will continue working with all of our partners to keep increasing the number of competent, newly- trained veterinarians in Ethiopia to support the national veterinary services and help to improve the well-being of the country’s human and animal populations.




# Curricular Mapping

## Missing Competencies

► **GAP:** Three WOAHA/OIE Day-1 Competencies were identified as missing during the curricular mapping of the UoG College of Veterinary Medicine curriculum:

- General Certification Procedures (2.10)
- Inspection and Certification Procedures (3.2)
- International Trade Framework (3.7)


Action Item	Activities Planned under the Action Plan
 1. Revise current courses to incorporate missing Day-1 Competency (2.10) <b>General Certification Procedures</b> to an existing class(es).	<p>Two courses will be revised to incorporate the missing content:</p> <p>A. Theory concepts will be incorporated into the 4<sup>th</sup> year <i>Veterinary Preventive Medicine (Vetm5233)</i> course.</p> <p>B. Practical elements will be incorporated into the 4<sup>th</sup> and 5<sup>th</sup> year clinical practices: <i>Clinical Practice I (VETM4181)</i>, <i>Clinical practice II (VETM4182)</i>, <i>Clinical practice III (VETM5241)</i>, and <i>Clinical practice IV (VETM5242)</i>.</p>

### Activities Performed:

**1.A. General Certification Procedures (2.10) Theory Concepts:** The theory/concepts were incorporated into the *Veterinary Preventive Medicine (VETM5233)* course as a chapter and delivered to 5<sup>th</sup> year students as a one-hour lecture. The content includes procedures to determine if an animal is healthy with the purpose to provide a health certificate, including detecting signs of infectious diseases or to evaluate other health conditions in live animals at an individual or herd level.

**1.B. Incorporation of Practical Elements:** Hands-on practice of performing health examinations for certification purposes were incorporated into the courses *Clinical Practice II (VETM4182)*, *Clinical Practice III (VETM5241)*, and *Clinical Practice IV (VETM5242)* in the last years of the training program. In these courses the students become familiar on how to perform (exercise), and complete animal health certificates used in transporting live animals or animal products for domestic or international trades.


The courses *Clinical Practice II* and *III* are administered in the teaching veterinary clinics for 16 hours and *Clinical Practical IV* is offered during off-campus site visits or students' rotation through different regional and national institutions such as National Animal Health Diagnostic Laboratories, vaccine production centers, quarantine stations, animal breeding and reproductive centers, export abattoirs, etc. The off-campus rotational training is a 3-week program.

Action Item	Activities Planned under the Action Plan
 2. Revise current courses to incorporate missing Day-1 Competency (3.2) <b>Inspection and Certification Procedures</b> to an existing class(es).	Theory concepts will be incorporated into the 4 <sup>th</sup> year <i>Veterinary Public Health I (VETM4171)</i> and <i>II (VETM4172)</i> courses.

#### Activities Performed:

**Inspection and Certification Procedures (3.2):** The theory concepts of this competency were incorporated into the 4<sup>th</sup> year *Veterinary Public Health I (VETM4171)* and *Veterinary Public Health II (VETM4172)* courses. Contents include procedures for inspection of the health status of animals and safety of animal products, development, and use of health certificates for transportation, domestic consumption, or exportation.

In addition to the originally planned activities, all students are exposed to official animal health certificates currently used by the Federal National Veterinary Service department for exportation of live animals and products in the *Clinical Practical IV* course during student final year rotations.

Action Item	Activities Planned under the Action Plan
 3. Revise current courses to incorporate missing Day-1 Competency (3.7) <b>International and Trade Framework</b> to an existing class(es).	Theory concepts will be incorporated into 4 <sup>th</sup> year <i>Animal Health Economics (VETM5234)</i> course.

#### Activities Performed:

**International Trade Framework (3.7):** Because of the complexity and amount of material in this competency, its content and related topics were incorporated as learning chapters in two courses in the 5<sup>th</sup> year of the veterinary curriculum instead of one as originally planned: the *Animal Health Economics (VETM5234)* and *Veterinary Ethics and Jurisprudence (VETM5202)* courses.


Contents such as: introducing World Trade Organization (WTO) and other standard setting organizations (WOAH, CODEX), the Sanitary and Phytosanitary Measures (SPS) and other international standards, the roles and responsibilities of the WOAH/OIE in developing regulations governing international trade in animals and animal products, the Codex Alimentarius Commission and its role in developing regulations governing international trade in food products of animal origin, and implications of transboundary diseases on international trade were included as a 2-hour lecture in the *Animal Health Economics (VETM5234)* course.

Topics related to the roles and responsibilities of the international regulations, requirements and guidelines for international trade or safe trade of animals and animal products, import control mechanisms and certification processes were incorporated as a learning chapter in the *Veterinary Ethics and Jurisprudence (VETM5202)* course and delivered as a 2-hour lecture.

## OIE Missing Content

► **GAP:** Significant content from the WOAHA/OIE Veterinary Education Core Curriculum were identified as missing during the UoG College of Veterinary Medicine curricular mapping, among them:

- Risk analysis.
- Drug withdrawals times and drug residues (including testing and impact).
- Environmental health and biological waste management.
- Outbreak investigation and outbreak management.

Action Item	Activities Planned under the Action Plan
 4. Incorporate <b>Risk Analysis</b> through expanding content already in the UoG Veterinary Curriculum and add a practical oriented teaching component.	<p>Two main approaches will be utilized:</p> <p>A. Theory concepts will be incorporated into the 5<sup>th</sup> year <i>Veterinary Epidemiology (VETM5232)</i> course.</p> <p>B. Practical portions will be incorporated in the same course via assignments which could include: case-based scenarios, group homework assignments, and/or risk analysis exercises.</p>

### Activities Performed:

**4.A. Application of Risk Analysis (3.5) theory concepts:** Introduction of Risk Analysis, including its main components such as hazard identification, risk assessment, risk management, and risk communication, were incorporated as part of the *Veterinary Epidemiology (VETM5232)* course in both the previous curriculum and the new 2017 harmonized curriculum.

**4.B. Application of Risk Analysis (3.5) practical elements:** Practical applications of Risk Analysis were included into the same course and delivered in a 3-hour teaching block. The teaching methodology used to teach this practical component is based on Risk Analysis tabletop exercises that are case-based scenarios with group assignments.

Different from some of the other activities in which the changes will not/have not occurred until the students reach the new course or content in the newly WOAHA harmonized 2017 curriculum, the decision was made to incorporate all of this content immediately so current student in the program could take full benefit of the newly created content and practical applications.

**Training and Continuing Education Courses at Gondar:** To support the development of Risk Analysis based content, two training/continuing education courses focused on “*International Trade and Risk Analysis*” were delivered in Gondar, Ethiopia (2017 and 2018). This course aimed to familiarize participants with intergovernmental organizations (FAO, WOAHA, WTO, WHO) involved in international trade of animals and animal products, including international rules and regulations on import/export such as: Codex Alimentarius and the Sanitary and Phytosanitary (SPS) agreement. This course also provided an introductory level



description and application of the principles, concepts and methods applied in Risk Analysis on import and export of livestock products and live animals. After this course, the participants were able to: Understand the functions and roles of intergovernmental organizations regarding global trade of animals and animal products and conduct a general qualitative risk analysis following WOAHO/OIE standards.

Action Item	Activities Planned under the Action Plan
<p>✓ 5. Incorporate <b>Drug Withdrawal</b> content into the UoG veterinary Curriculum.</p>	<p>Two main approaches will be utilized:</p> <p>A. The 3<sup>rd</sup> year courses <i>Pharmacology and Therapy I (VETM3121)</i> and <i>II (VETM3122)</i> will be revised to incorporate the theory concepts in regard to Drug Withdrawal.</p> <p>B. During clinical courses in the 4<sup>th</sup> and 5<sup>th</sup> year students will fill out prescription forms and write instructions for clients to include withdrawal information. These forms will be reviewed and grade by faculty. Since there are no local regulations on this subject, best practice concepts will be utilized.</p>



#### Activities Performed: (See also Action Item #18 - Training and Continuing Education Course)

**5.A. Veterinary products (2.7) – Drug withdrawal time:** Specific drug withdrawal times for each relevant drug, as a means to prevent drug residues in animal products, were incorporated into the *Pharmacology and Therapy I (VETM3121)* and *II (VETM3122)* courses, as well as allocated in the corresponding drug administration topics across both courses.

**5.B. Veterinary products (2.7) – Prescription Forms:** Practical exercise focused on adding proper withdraw times in the prescription forms were incorporated in the *Clinical Practice (III & IV)* courses. For that purpose, the prescription form used in the university veterinary teaching clinic/hospital was revised to include drug withdrawal time instructions where they correspond. The 4<sup>th</sup> and 5<sup>th</sup> year students practice completing the case report sheet and drug prescription form by including drug withdrawal period information. The proper completion of the prescription form by each student is often monitored by the faculty and /or the clinician on duty.

#### Ethiopian Veterinary Schools that have participated in UoG-OSU WOAHO Twinning Activities



Action Item	Activities Planned under the Action Plan
<div>   </div> <p>6. Incorporate <b>Drug Residue Testing</b> into the UoG veterinary Curriculum.</p>	<p>Two main approaches will be utilized:</p> <p>A. The DVM Curriculum Review Taskforce will evaluate how to incorporate such content to the 4<sup>th</sup> year course <i>Veterinary Public Health II (VETM4172)</i>. Since there are no local regulations on this subject, best practice concepts will be utilized.</p> <p>B. Evaluate how to add to the 4<sup>th</sup> year <i>Veterinary Public Health II (VETM4172)</i> course the practical testing of the presence of Drug Residues in carcasses and other food products. Consider this activity as part of a future Laboratory Twinning proposal.</p>


#### Activities Performed:

**6.A. Drug Residue Testing – Foundational Knowledge:** The theory concept of food safety and environmental impact of drug residues and drug/chemical residue testing in animal products (meat, milk, etc.) was incorporated as a topic in the *Veterinary Public Health II (VETM4172)* course for 4<sup>th</sup> year veterinary students.

**6.B. Drug Residue Testing – Practical elements:** Practical experiences for testing the presence of drug residues in animal source food products is not delivered at UoG-CVMAS teaching laboratory due to unavailability of test materials/kits. This practical element was planned to be addressed through a laboratory twinning program focused on establishing such capacity at the UoG; however, the proposal was not submitted as other major priorities took precedent.

Nevertheless, UoG-CVMAS students are exposed to drug residue testing (for issuing health certificates) at the *National Veterinary Drugs, Feed and Food Products Quality Control Laboratory* (managed by the Ministry of Agriculture) during their 5<sup>th</sup> year off-campus training rotation (*Clinical Practice IV* course).




Action Item	Activities Planned under the Action Plan
 7. Incorporate <b>Environmental Health and Biological Waste (manure) Management</b> into the UoG veterinary Curriculum.	<p>The main approach will be the creation of a newly independent, semester long course entitled “<i>One Health</i>” (VETM5173).</p> <p>In this course it will be covered the environmental health and biological waste management content as other One Health topics or areas identified missing or lacking in the curriculum. The course will count for 2 credit hours, and it will be delivered on the 5<sup>th</sup> year second semester of the veterinary curriculum.</p> <p>This course will be incorporated in a future restructuring of the veterinary curriculum, which would take full effect in the 2017-2018 cycle. All new incoming veterinary students will be placed under the new updated and harmonized curriculum following WOAHA/OIE guidelines.</p> <p>Since there are very few specific or detail local and national regulations on this specific subject, best practices will be used.</p>

#### Activities Performed:

**Environmental Health and Biological Waste Management:** An independent “One Health” course with 3 ECTS (European Credit Accumulation and Transfer System) was developed and inserted into the UoG DVM curriculum and began being delivered to 5<sup>th</sup> year students as a semester-long course since 2021. The course content was developed by incorporating the concept and application of One Health in the control of emerging and re-emerging zoonotic diseases, foodborne diseases and food safety, antimicrobial resistance, and environmental health and biological waste management.

In the Ethiopian Nationally Harmonized DVM Curriculum (2020), the concept of One Health was included as a section in *Vet Public Health I* course, and the application of One Health incorporated into different courses including *Vet Public Health II*.

A UoG-CVMAS faculty who visited the OSU was responsible in drafting the course content that produced the final version implemented today.

Action Item	Activities Planned under the Action Plan
 8. Incorporate <b>Outbreak Investigation and Management</b> into the UoG veterinary Curriculum.	<p>Two main approaches will be utilized:</p> <ul style="list-style-type: none"> <li>A. The DVM Curriculum Review Taskforce will evaluate how to incorporate such content to the 5<sup>th</sup> year <i>Veterinary Epidemiology (VETM5232)</i> course.</li> <li>B. Organize a short-term training course for staff members on Outbreak Investigation and Outbreak Management to be offered during the One Health summer Institute in Gondar, Ethiopia.</li> </ul>

#### Activities Performed:

**8.A. Outbreak Investigation and Management – Foundational Knowledge:** The course content of *Veterinary Epidemiology (VETM5232)* was revised to provide more emphasis on outbreak investigation and control management. The newly designed course content is delivered to 5<sup>th</sup> year students as a separate 2-hour block. The faculty rely on practical tabletop exercises to deliver this content, including several teaching aids (i.e., video and case-scenario writing exercise), designed to help the students to understand the steps and process of outbreak investigation and control management, as well as to develop skills related to collecting, handling, and shipment of appropriate specimens for the investigation of reportable animal disease or foodborne outbreaks.

**8.B. Outbreak Investigation and Management – Faculty Training / Continuing Education Course:** A short-term training continuous education course for staff members on *Outbreak Investigation and Management* was proposed to be offered by OSU faculty during the One Health Summer Institute training in Gondar. However, even though the course has been designed and developed by OSU faculty it was not possible its delivery at Gondar. It is expected that in future iterations of the One Health Summer Institute at Gondar such course could be delivered.


**Faculty Exchange:** In March 2018, Dr. Tsegaw Fentie, (former) Dean of the UoG-CVMASc, traveled to Columbus, OH, as part of the Faculty Exchange program. He attended classes and other academic activities to gain ideas and experiences that would allow him to generate the educational material needed (based on the Action Plan) and improve teaching content and delivery in Gondar. Dr. Fentie met with faculty responsible for teaching Epidemiology to both professional and graduate students at OSU-CVM and College of Public Health. They discussed teaching methodology and student assessment methods. Dr. Fentie updated the UoG Veterinary Epidemiology course syllabus to include case studies, group projects, video scenarios and reflections as indicated above. These changes were designed to increase practical learning beyond didactic teaching methods. During his visit, Dr. Fentie also gathered valuable information for the development of two **PhD programs in Veterinary Epidemiology and Public Health at the UoG-CVMASc**. These programs were designed to train graduates to achieve a high level of scholarly competence in Veterinary Epidemiology and Public Health. These programs include coursework in advanced epidemiology and biostatistics, experience in the classroom and laboratory, a dissertation, and an oral defense. In 2020, the first cohort of PhD students was accepted in these programs.



## OIE Course Misalignment

► **GAP:** Several courses were identified to be taught in a different sequence in the UoG veterinary curriculum when compared with the Veterinary Education Core Curriculum WOAHO/OIE Guidelines:

- Animal Welfare (currently in the 5<sup>th</sup> year => ideally 1<sup>st</sup> or 2<sup>nd</sup> year)
- Biostatistics (currently in the 5<sup>th</sup> year => ideally 1<sup>st</sup> or 2<sup>nd</sup> year)
- Communications (currently in the 1<sup>st</sup> year => ideally across the program)


Action Item	Activities Planned under the Action Plan
 9. Relocate the <b>Animal Welfare (VETM5202)</b> course from the 5 <sup>th</sup> year to the 4 <sup>th</sup> year of the curriculum.	This process will take 1 to 2 years. The UoG will discuss with the Ethiopian Ministry of Education and Veterinary Schools on how to start the process of relocation to harmonize their curriculum with the WOAHO/OIE recommendations.

### Activities Performed:

**Course Relocation:** The *Animal Welfare (VETM5202)* course, which was originally delivered to advanced veterinary students in the 5<sup>th</sup> year of their program, was moved to the 2<sup>nd</sup> year of the curriculum as recommended by the WOAHO Core Veterinary Curriculum. The purpose of this move was to expose the veterinary students to Animal Welfare topics earlier so they can implement them as they progress through their training. In addition to this move in the curriculum, practical components such as video demonstrations, case-based scenarios, and farm visits were newly incorporated into the *Animal Welfare (VETM5202)* course. One ECTS was added for practical exercises on this subject.


**Training and Continuing Education Courses at Gondar:** To support the redesign and further development of the *Animal Welfare (VETM5202)*, two training/continuing education courses focused on “*Animal Welfare, Productivity and On-Farm Assessment*” were performed in Gondar, Ethiopia (2017 and 2019). The goal of these workshops was to introduce participants to teaching strategies for the field of animal welfare. World Organization for Animal Health (WOAH) definitions, standards, and global guidelines for animal transport, food animal production systems, stray animal control, and slaughter were covered. By the end of these workshop, participants were able to: define animal welfare to include scientific, ethical, and cultural dimensions; find resources for developing coursework in animal welfare; create the framework for an introductory course in animal welfare; and create assignments and content for an introductory course in animal welfare.

**Faculty Exchange:** To help with the redesign and update of this course, it was planned for one UoG faculty member to visit OSU during the Spring of 2018 to specifically receive training and experience on Animal Welfare. However, due to unforeseen circumstances, the faculty exchange did not take place.

Action Item	Activities Planned under the Action Plan
 10. Relocate the <b>Introduction to Statistics</b> course (Vetm5221) from the 4 <sup>th</sup> year to the 2 <sup>nd</sup> year of the curriculum.	<p>This process will take 1 to 2 years. The UoG will discuss with the Ethiopian Ministry of Education and Veterinary Schools on how to start the process of relocation to harmonize their curriculum with the WOAHO/OIE recommendations.</p>

#### Activities Performed:

**Course Relocation:** The *Introduction to Statistics (VETM5221)* course, which was originally delivered to advanced veterinary students in the 5<sup>th</sup> year of their program, was relocated to the 2<sup>nd</sup> year of the curriculum as suggested by the WOAHO Core Veterinary Curriculum. The purpose of this move was to expose the veterinary students to statistical concepts earlier so that they could use them throughout their training program.

Action Item	Activities Planned under the Action Plan
 11. Incorporate <b>Communication</b> into other courses across the curriculum instead of developing a standalone course on this subject.	<p>Three main approaches will be utilized to improve students' communication proficiency by providing additional opportunities and activities to practice such skill:</p> <ul style="list-style-type: none"> <li>A. Change teaching methodology to incorporate specific activities to boost students' communication abilities in multiple courses across the curriculum, including more written communication exercises (i.e., production of factsheets), oral presentation of assignments, etc.</li> <li>B. The DVM Curriculum Review Taskforce will study potential courses where to change their current assessment methodology to move them from only written examination (i.e., exams) to other forms of evaluations that could further help to improve the students' communication skills (i.e., oral exams, seminar presentations, group projects, etc.).</li> <li>C. Evaluate current courses by external examiners to identify potential areas of improvement and compliance.</li> </ul>

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### Activities Performed:

**11.A. Incorporate communication activities in current courses:** An introductory-level Communicative English Course for 1<sup>st</sup> year veterinary students was part of the previous curriculum; however, the assessment performed indicated that such standalone course was not adequate to develop in the students' proper communication skills. In the newly revised curriculum, communication skill building activities were included into different courses across the six-year UoG veterinary program. Some of the changes were made in the teaching method by incorporating numerous communication exercises such as writing group projects and reports, oral presentation of assignments, seminars, and reports to improve students' communication abilities to different audiences.

**11.B. Changes in assessment methodology to assess communication:** Different assessment methodologies were incorporated throughout courses in the veterinary curriculum that allows evaluation of the communication skills of the students both in writing and verbal. For example, oral examination by internal and external examiners has been implemented in major veterinary courses as an assessment method to identify potential areas of improvement and compliance of the students. Several of those external examiners are veterinary professionals from local and regional government offices and institutions as well as the private sector.

**11.C. External Course Audits:** To date, no external audits of the teaching methodology, including communication skill methods have been able to take place.

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## Session 2

# OIE Specific Competencies

### Infectious Diseases Related Competencies

- **GAP:** It was identified in UoG veterinary graduates' low levels of confidence and proficiency across Transboundary Animal Diseases (OIE Day-1 competency 2.2), Emerging and Re-emerging Diseases (2.4), Zoonotic Diseases (2.3) and Disease Prevention and Control Programs (2.5) in regard to:
- How to identify or recognize infectious diseases, especially Transboundary Animal Diseases (TADs) and Emerging Diseases (EDs)
  - How to select the proper diagnostic technique and how to interpret their results.
  - How to identify proper therapeutic approaches and interventions to manage outbreaks.

Action Item	Activities Planned under the Action Plan
 12.a Improve student's ability to recognize and diagnose <b>Transboundary Animal Diseases</b> (Day-1 Competency 2.2) and <b>Emerging Diseases</b> (2.4); including their ability to <b>Manage Disease Outbreaks</b> (2.5).	Design, develop and incorporate practical, real-based outbreak scenarios into the 5 <sup>th</sup> year <i>Veterinary Epidemiology (VETM5232)</i> course that address the identified deficiencies.

#### Activities Performed:

The 5<sup>th</sup> year *Veterinary Preventive Medicine (VETM5233)* course content was revised to accommodate these competencies and provide more emphasis on recognition and diagnosis of most important infectious diseases (TADs, EDs). Content related to outbreak investigation and management of TADs and EDs was addressed together under action item 8 as described in this report.

The original action plan included developing outbreak scenarios focused on these competencies by UoG and/or OSU graduate students as their Master Thesis projects. These scenarios would focus on relevant diseases for Ethiopia (i.e., Rift Valley fever), be culturally appropriate, and comply with international standards. However, due to different circumstances, the UoG-OSU teams did not develop such scenarios, instead they were acquired through the Day 1 Online Platform. Through this veterinary education site, in which both OSU and UoG are partners, multiple scenarios were made available to the UoG faculty for them to review and adapt such teaching material to their reality.

**Faculty Exchange:** One UoG faculty member was planned to visit OSU to specifically receive training and experience on emergency response and outbreak investigation; however, due to unforeseen circumstances, the Faculty Exchange did not take place.



- ✓ 12.b Improve student's ability to recognize and diagnose **Transboundary Animal Diseases** (Day-1 Competency 2.2) and **Emerging Diseases** (2.4); including their ability to **Manage Disease Outbreaks** (2.5).

Two main approaches will be utilized:

- A. Reinforce assignment of 5<sup>th</sup> year veterinary students to official field veterinarian by strengthening the off-campus rotation program.
- B. Theory concepts on these subjects will be incorporated into the 5<sup>th</sup> year *Veterinary Preventive Medicine* (VETM5233) course.

#### Activities Performed:

**12.b.A. Strengthening off-campus rotation:** The 6<sup>th</sup> year off-campus rotations were revised and strengthened to assure that all veterinary students were exposed to current national control strategies for TADs and EDs during their site visits to the *Ethiopian National Veterinary Institute (NVI) for Vaccine Production* and the *Ethiopian Animal Health Institute (AHI) for Research and Diagnostics*.

**12.b.B. Foundational Knowledge:** Theoretical concepts on TADs (2.2) and emerging infectious disease (2.4) were revised and incorporated into the 5<sup>th</sup> year *Veterinary Preventive Medicine* (VETM5233) course. Emphasis was given on the recognition of important TADs pathogens, transmission pathways and country level point of entry, national and international surveillance programs, and distribution of TADs, economic and public health implications, selection and interpretation of diagnostic tests and result interpretations. Practical and case-based scenarios were also incorporated for management of outbreaks of specific TADs. The revised *Veterinary Preventive Medicine* (VETM5233) course is offered in 5 ECTS/3 credit-hours.



## Regulatory Medicine Related Competencies

- ▶ **GAP:** The average UoG veterinary graduate is not sufficiently competent in regard to General Certification Procedures (2.10) to determine if an animal is healthy and how to generate a health certificate.
- ▶ **GAP:** The average UoG veterinary graduate is also unsure of the proper authorities to report an incident event or outbreak of a Transboundary Animal Diseases and/or Emerging Diseases (TAD/ED), as well as the proper chain of reporting.

Action Item	Activities Planned under the Action Plan
✓ 13. Incorporate the elaboration of <b>Health Certificates</b> and <b>General Certification Procedures</b> (2.10) into Clinical Diagnosis and Practice.	During clinical practice courses in the 4 <sup>th</sup> and 5 <sup>th</sup> year students will fill out health certificate forms to practice such certification procedure. Such forms will be reviewed and graded by faculty. Since there are no local regulations on this subject, best practice concepts will be utilized.

### Activities Performed: (See also Action Items #1 and #2)

The rules and regulations regarding certification procedures were incorporated into the *Veterinary Ethics and Jurisprudence* course. To include in the new curriculum the practical aspects of this competency, the courses *Clinical Practice III (VETM5241)* and *Clinical Practice IV (VETM5242)* were modified so that the students could practice the completion of health certificates for transporting live animals or animal products for domestic or international trade.

In addition to the practical component, during off-campus visits, students are exposed to the official national health certificate form used by the Federal Veterinary Service department for live animal movement and product export purposes.



Action Item	Activities Planned under the Action Plan
<p>✓ 14. Incorporate in the curriculum proper procedures to <b>report the incidence or outbreaks of TADs/EDs</b>, both at the national and international level.</p>	<p>Seminars describing the proper chain of reporting will be incorporated into the 5<sup>th</sup> year <i>Veterinary Epidemiology (VETM5232)</i> course. These seminars will be provided by four different regulatory authority entities, who will be invited to teach this class/seminar on a rotating basis:</p> <ul style="list-style-type: none"> <li>A. Ministry of Livestock and Fishery-Division lead.</li> <li>B. Ministry of Livestock and Fishery-Regional Office.</li> <li>C. Ministry of Livestock and Fishery-Zonal Office.</li> <li>D. OIE Country Delegate.</li> </ul>

#### Activities Performed:


**Reporting outbreaks for TADs and EDs:** The *Veterinary Epidemiology (VETM5232)* course was modified to include a new chapter on Animal Health Information Systems in which students are provided with the proper chain of reporting and feedback that take place in Ethiopia. The revised content is delivered in 2-hour block. Students practice by completing a WOAHA outbreak report using the official Ethiopian Veterinary Service formats, which is generally completed by the veterinarians in charge and sent to the Federal Veterinary Service and regional diagnostic laboratory for confirmation.

Invited experts from the Ministry of Agriculture (the Ethiopian WOAHA delegate or Epidemiologists) teach portions of this course in the 2-hour assigned teaching block, and in addition, the invited regulatory authorities provide a seminar for 5<sup>th</sup> year students in this specific subject of outbreak management.



## General Competencies

- ▶ **GAP:** The students and recent UoG veterinary graduates did not feel competent managing animal welfare related issues in common or routine situations.
- ▶ **GAP:** The recent UoG veterinary graduates were also identified as insufficient or not competent in:
  - Proper use of veterinary products, especially in regard to withdrawal times,
  - Drug residue testing,
  - Issuing of Health Certificates, and
  - Mobilization permits.
- ▶ **GAP:** The recent UoG veterinary graduates were also identified as insufficient or not competent in identifying up-to-date information regarding subjects related to WOAHO/OIE Competencies.

Action Item	Activities Planned under the Action Plan
 15. Insert <b>Animal Welfare</b> related issues into existing veterinary courses at the UoG College of Veterinary Medicine curriculum.	<p>Design, develop and incorporate practical, real-based scenarios dealing with common animal welfare related issues into their 2<sup>nd</sup> year <i>Animal Welfare</i> course (VETM5202) that address the identified deficiencies.</p> <p>Since there are no local regulations on this subject, best practice concepts will be utilized, including WOAHO/OIE standards and lessons learned from other countries, until Ethiopia develops their own standards. Then Ethiopia standards would be taught.</p>

### Activities Performed: (See also Action Item #9)

*Animal Welfare (VETM5202)* course content was revised to identify gaps and incorporate practical components, including video demonstrations and case-based scenarios dealing with common animal welfare related issues in Ethiopia. International welfare standards including WOAHO standards and lessons learned from other countries and global best practices were incorporated as new content. Local welfare standards for Ethiopia are currently under development by the Ministry of Agriculture to be issued in the future. Students in this course also participate in community awareness campaigns including training animal handlers in animal welfare issues, as well as exercising and evaluating welfare issues in animal farms (poultry and dairy) and UoG teaching clinics. The course credit hour was increased from 2 to 3 ECTS to incorporate the new practical components.

To further support the training of the veterinary students in this subject, brochures and leaflets were developed on working animal handling and management (specific to equines) in collaboration with the SPANA-UK (Society for the Protection of Animals Abroad) project in UoG.



Externship students (6<sup>th</sup> year) also enroll in the *Farm Practice (VETM6265)* course of 4 CrHr. During this rotation, extern students are assigned to different farms (poultry, dairy, feedlots, etc.) to assess and evaluate animal handling and management practices in location, identify animal welfare problems for individual animals, as well as animal populations, and advise farm owners in corrective actions. At the end of the course, students report their findings both in writing and through a short presentation and evaluated in front of internal examiners for grading.

#### Action Item

- ✓ Identified deficiencies in this section, including proper use of **veterinary products (especially in regard to withdrawal times), drug residue testing, issuing of health certificates, and mobilization permits** are already planned to be covered under the Action Items #1, 2, 5, 6, and 13.

#### Activities Performed:

See Action Item #1, 2, 5, 6, and 13.

#### Action Item

#### Activities Planned under the Action Plan

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>✓ 16. UoG is opening a new veterinary library and will design special services to allow its students to have easy access to up-to-date information regarding subjects related to WOAHS/OIE Competencies</li> </ul> | <p>During the site visits to OSU, the UoG faculty will meet and consult with OSU-CVM Veterinary Library staff to obtain ideas and guidelines on how to provide easy access to their specific subject in a library setting.</p> |
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#### Activities Performed:

The UoG-CVMAS designed and built a dedicated veterinary medical library which offers specialized services to allow veterinary medicine and animal science students to access to up-to-date information related to WOAHS Competencies. How to use such online and digital sources was incorporated as a block on “Health Informatics” into the *Introduction to Information and Communication Technology - ICT (CoSc120)* course. The credit hour allocated to such course was also increased from 2 to 3 CrHr.

The UoG-CVMAS also equipped their student’s library with dedicated ICT technology (i.e., 350 computers) that allows students to gain access to internet for browsing up-to-date information on WOAHS competencies and other related educational resources.

## Session 3

# OIE Advanced Competencies

## Organization of Veterinary Services

- **GAP:** The average UoG veterinary graduate was identified as not sufficiently competent in regard to Organization of Veterinary Services (3.1), specifically in regard to the organization of veterinary services in Ethiopia.

Action Item	Activities Planned under the Action Plan
<div> <div>✓</div> <div> 17. Reinforce and/or include in the curriculum identification of the <b>laws and regulations that provide governmental veterinary services (VS) their authority.</b> </div> </div>	<p>Two main approaches will be utilized:</p> <p>A. The 5<sup>th</sup> year <i>Ethics and Jurisprudence (VETM5202)</i> course will be restructured, and it will include new case-based teaching methods to improve the level of competency of the students in this subject.</p> <p>B. A two-year rotation of guest speakers including the governmental agencies listed under Action Item 14 will be organized in the form of seminars. These will target 2<sup>nd</sup> and 3<sup>rd</sup> year veterinary students to provide them a complete picture of governmental veterinary services in Ethiopia, including potential job and career opportunities.</p>


### Activities Performed:

**17.A. Organization of Veterinary Services (3.1):** The *Veterinary Ethics and Jurisprudence (VETM5202)* course content was revised to include the structure and roles of the national veterinary services in Ethiopia, as well as the governmental authority with specific laws and regulations currently in place nationally and the country's international cooperation with the global community. During the review and update of this course, practical case-based teaching methods were also included to improve the level of competency of the students in this subject. The Ethics and Jurisprudence course was restructured to 3 ECTS and moved to be taught to 5<sup>th</sup> year students.

**17.B. Governmental Guest Speakers:** Invited guest speakers from National and Regional Offices of Agriculture are now regularly providing seminars to 4<sup>th</sup> and 5<sup>th</sup> year veterinary students, in which these officials provide a complete picture of governmental veterinary services in Ethiopia, including potential job and career opportunities as stated in **Action Item #14.**

## Management of Contagious Disease

- **GAP:** The average UoG veterinary graduate reported not to be sufficiently competent in regulatory components related to Management of Contagious Disease (3.3), specifically in regard to how to respond to outbreaks of contagious diseases (including TADs and EDs), such as:
- Movement Control and Quarantine,
  - Traceability,
  - Humane Euthanasia,
  - Carcass Disposal,
  - Disinfection and Sanitization, and
  - Zoning and Compartmentalization Principles.

Action Item	Activities Planned under the Action Plan
 18. Incorporate these advance competencies on <b>Management of Contagious Diseases</b> into the UoG veterinary curriculum.	All the issues listed here will be incorporated into the newly independent, semester long “ <i>One Health</i> ” (VETM5173) course that would be created as previously described in Action Item #7. These topics will be delivered using a practical format to increase the level of student competency.


### Activities Performed:

**Management of Contagious Diseases (3.3):** All topics and themes associated to this competency were distributed across three courses. Components of infectious disease prevention and control programs, such as movement control and quarantine, traceability, humane euthanasia, carcass disposal, disinfection and sanitization, and zoning and compartmentalization principles were included in the revised content of the *Veterinary Preventive Medicine* (VETM5233) course as a chapter as mentioned in Action Item #12. The One Health approach for the management of contagious diseases was incorporated into the *One Health* (VETM5173) course. And all topics related to infectious disease surveillance, source identification and routes of transmission, as well as risk communication as important elements of an Outbreak Investigation were incorporated into the *Veterinary Epidemiology* (VETM5232) course.

**Training and Continuing Education Courses at Gondar:** To be able to provide additional content and support to this competency, an *International Dairy Certificate Program workshop* (2019) was implemented at the UoG. This training focused on the identification of herd performance problems, development of effective herd health protocols with a focus on the proper use of antimicrobials drugs as described in the WOAHA Standards, Guidelines, and Resolution of Antimicrobial Use, and development of a ‘preventive system-in-place’ that can be used in cattle and goat farms nationwide to manage important contagious diseases.


## International Trade Framework

- ▶ **GAP:** The average UoG veterinary graduate was identified to be not sufficiently competent in regard to laws and regulations for international trade of animals and animal products.
- ▶ **GAP:** The average UoG veterinary graduate was reported not to be sufficiently competent in regard to international intergovernmental agencies and their roles and responsibilities.

Action Item	Activities Planned under the Action Plan
 19. Include <b>International framework and regulations</b> (i.e., terrestrial animal health code, aquatic animal health code, <i>Codex Alimentarius</i> ) into the UoG veterinary curriculum.	The 5 <sup>th</sup> year courses <i>Animal Health Economics</i> (VETM5234), and <i>Ethics and Jurisprudence</i> (VETM5202) will be revised to incorporate this content.

### Activities Performed:

**International Trade Framework and regulations (3.7):** Two 5<sup>th</sup> year courses, *Animal Health Economics* (VETM5234) and *Ethics and Jurisprudence* (VETM5202) were revised to incorporate international trade framework as stated in **Action Item #3**.

Action Item	Activities Planned under the Action Plan
 20. Include <b>roles and responsibilities of intergovernmental organizations</b> (i.e., WOAHA, WTO, FAO, WHO) into the UoG veterinary curriculum.	Two main approaches will be utilized: A. The first step will be as indicated in Action Item #19. Include subject in current courses. B. The second stage step will be to produce hard copies of material in the form of a Communicational Package Material.

### Activities Performed:

**20.A. Incorporation in current courses:** The different roles and responsibilities of the most relevant intergovernmental organizations were successfully incorporated in the international trade framework as indicated in Action Items #3 and #19.

**20.B . Preparation of Teaching Material for Faculty:** One of the challenges identified by the faculty at the UoG and other Veterinary Educational Establishments in Ethiopia, as indicated by their Deans who participated in the Twinning program, is the lack specific material on the roles and responsibilities of intergovernmental organizations in regard to veterinary medicine that their faculty could use to instruct their students. It was planned to prepare a communication package material to be developed by the UoG on intergovernmental organizations associated to veterinary services to be distributed throughout the other Ethiopian veterinary schools to fill such gap. That package is still under development and is not currently available.




## Session 4

# Human Factor and Infrastructure

### Student Issues


- **GAP:** Lack of motivation, proactiveness, and confidence were described by the UoG veterinary students as major roadblocks in their education. Some of the reasons provided were:
- Students are assigned to DVM degree although this is not their professional passion (veterinary medicine was not their first or second choice).
  - There are no clear career paths post-graduation – they have difficulty identifying relevant career options.
  - Strong hierarchical teaching structure which discourages student participation.
  - Limited communication skills.

Action Item	Activities Planned under the Action Plan
 21. Change admission process to Veterinary Colleges to select motivated students who wish to pursue veterinary careers.	<p>Due to the fact that the admission process to Veterinary Colleges in Ethiopia is centrally managed by the Ministry of Education, the UoG cannot directly act on this action item.</p> <p>However, it was decided to perform a retrospective study on student admission criteria and its association with performance during school and job placement.</p>

#### Activities Performed:

**Changing the admissions process to Veterinary Colleges to select motivated students:** The student admissions process was managed centrally by the Ministry of Education until 2020. Since then, the student admissions process has been modified. Currently, all UoG students are enrolled into the University under the Natural and Social Sciences program, attending common courses in the 1<sup>st</sup> year. Once they reach the 2<sup>nd</sup> semester of the 1<sup>st</sup> year, top performing and motivated students must apply to join the Medicine and Veterinary Medicine programs. This process has increased the number of highly motivated students pursuing the veterinary degree.

To justify such changes, a five-year retrospective study was initially planned to be undertaken that focused on student admissions criteria and its impact on student performance and motivation, but the study was ultimately not undertaken.

Action Item	Activities Planned under the Action Plan
 22. Improve student motivation.	<p>Multiple approaches will be utilized:</p> <ul style="list-style-type: none"> <li>A. Several veterinary student clubs will be created to promote activities to increase their level of motivation and to envision future career paths.</li> <li>B. The UoG College of Veterinary Medicine will establish an Office of Alumni and Professional Development to provide direct support to its students in regard to job placement.</li> <li>C. Organize a regular veterinary symposium with other Veterinary Colleges focused on career development and related topics to Lobby the Government of Ethiopia for job opportunities and improved working conditions for veterinary personnel.</li> </ul>

#### Activities Performed:


**22.A. Veterinary Student Clubs:** Student-led clubs were an important part of the overall strategy to increase student participation and motivation. The UoG-OSU student exchange program was instrumental for the initiation of student-led clubs in UoG-CVMAS. Three student clubs (Veterinary Public Health, Clinical Medicine, and One Health) have been established since 2018. These clubs were initiated and originally led by veterinary students who participated in the WOAHH Twinning exchange program (see annual reports for details). **Today, these clubs are active and still led by the students at the UoG-CVMAS, where over 70% of the student body belong to at least one of these clubs.** Members of these student clubs have been actively involved in multiple extracurricular activities such as anti-rabies activities in the community, encompassing vaccination and awareness campaigns. They have also launched educational campaigns targeting high school students to showcase veterinary medicine as a potential career path in the hopes of inspiring the next generation of motivated veterinary students. The main goal and function of these clubs was to raise student motivation and involvement in their own education, while increasing the number of opportunities for extracurricular training and education necessary to cover some of the WOAHH/OIE Day-1 Competencies. We can conclude without doubt that this has been a sound success.

**22.B. Establishment a Professional Development program:** The UoG created a *Career and Professional Development Center* to help motivate students and to assist them in securing quality jobs in their field. Under the Center, a program was developed to offer student support services that include career counseling and job placement, entrepreneurial skill training, and professional behavior and communication, among other valuable soft skills.

The UoG-CVMAS also established an *Alumni and Professional Development office* to help facilitate the interaction with the quickly growing alumni base of the College as well as to provide direct support to its graduating students in regard to job placement. The CVMAS is actively collaborating with Ethiopian Veterinary Association and Ministry of Agriculture in providing training for graduates interested in working privately and participating in Public-Private-Partnership.


These programs used the fundamentals provided during a training workshop on *Design and Establishment of Career & Professional Development Programs for Health Science Colleges* delivered by Amanda Fark (OSU), who is a professional development officer at OSU that works very closely with the Association of American Veterinary Medical Colleges (AAVMC). She delivered a week-long course focused on how to create career and professional development programs within professional schools. Some of the topics covered in this workshop, which was also attended by several authorities of the University, included: how to develop these programs, how to develop and foster mentoring programs for professional and graduate students, how to facilitate student relationships with alumni and employers, how to integrate professional development topics into the curriculum, and more.

**20.C. Regular veterinary symposiums focused on career and professional development:** Currently the UoG and the OSU are collaborating in developing a needs assessment study involving all veterinary schools in Ethiopia. This type of symposiums would be included in the new phase under this program sponsored by the Bill and Melinda Gates Foundation.

Action Item	Activities Planned under the Action Plan
 23. Counter strong hierarchical teaching through a pedagogical training program.	Create a short-term pedagogical training program for UoG Professors to attend during early summer.

**Activities Performed:**

**Faculty Pedagogical Training:** It was originally planned for a short-term course for UoG faculty to be delivered by an OSU expert during the One Health summer program. The aim of this workshop was to showcase different teaching techniques and methodologies to help improve the pedagogical delivery of the courses and their content, both theory and practice, by the UoG-CVMAS faculty and instructors. However, due to unforeseen circumstances, this course was not able to be delivered.

Action Item	Activities Planned under the Action Plan
 24. Strengthen teacher-student relationships.	Involve faculty as advisors for student clubs.

**Activities Performed:**

To help improve and strengthen teacher-student relationships, several activities have been put in place. One of the most successful is in regard to faculty involvement with the students' clubs. Today multiple interested faculty members directly and actively advise and support all three clubs. The faculty help to maintain continuity of the activities as students move through the program, as well as help to maintain the focus of each club on complementing the student's education and training in regard to the Day 1 competencies. Another example is the assignment of student advisors by each department to each group of students that enter the College so the students can consult directly with these faculty advisors about academics and other relevant social issues that can affect students' performance and motivation. This has opened different channels of communication between the faculty and the students.

### Action Item

- ✓ Identified deficiencies in this section in regard to Communication are already planned to be covered under the Action Items #11.

#### Activities Performed:

Details of the activities implemented are described in Action Item #11 in this technical report.

## Teaching Issues

- ▶ **GAP:** Several issues were identified, by both students and faculty, which were interfering with an effective teaching and learning environment, among them:
  - Severe pedagogy or instructional method problems (from course design to class delivery and evaluation).
  - Teaching methods are heavily classroom based.
  - Insufficient experience (especially by young faculty) in certain subjects.
  - Unenthusiastic students with little motivation to learn.

### Action Item

### Activities Planned under the Action Plan

- ✓ 25. Improve teaching methodology or pedagogy.

Three main approaches will be utilized:

- A. Request more seats for the UoG High Diploma Program (HDP), which is mainly focused on teaching methodology; with a goal to reach 100% of faculty trained and certified.<sup>\*1</sup>
- B. Require for the entire UoG staff to apply at least one active learning method for each course across the curriculum.<sup>\*2</sup>
- C. UoG Faculty visiting OSU should rotate through the university teaching department.

#### Activities Performed:

**25.A. Improve teaching methodology/pedagogy:** To address this topic, faculty members of CVMAS attended the UoG one-year advanced training program to attain a Higher Diploma for Teaching Methodology. The number of faculty with Higher Diploma certification increased from 17 faculty trained (34%) before the WOAHS Twinning program to 72 (80%) by 2020. This professional training program was focused on pedagogical skills to help faculty to prepare courses that ensure student engagement with the educational material, improve curriculum delivery, and augment student knowledge retention.

**25.B. Active learning across curriculum:** Today, all UoG academic staff is expected to apply active learning methods in each one of their courses across the curriculum. The UoG Education Quality Assessment and



Auditing Directorate monitors the proper implementation of active learning and performance of faculties every semester.

**25.C. Faculty Exchange at OSU:** Through the Faculty Exchange program, the Dean of the UOG-CVMAS visited the OSU-CVM, an opportunity during which he was exposed to different teaching methods while attending both undergraduate and postgraduate classes, as well as while visiting the OSU education development office. The aim was to provide the Dean with a menu of potential options that could be implemented at the UOG-CVMAS. After his return, the Dean shared his experiences with other UoG faculties in different seminars, as he provided oversight of the reviewing and updating process of their curriculum and looking for opportunities on how to incorporate such techniques.



Action Item	Activities Planned under the Action Plan
<input checked="" type="checkbox"/> 26. Audit courses/classes on a routine basis to evaluate their teaching methodology or pedagogy applied and suggest further changes (if needed).	Each department has created a faculty committee comprised of 3 members that will evaluate all courses. They will perform this task through student evaluations, peer evaluations, and supervisor evaluations.

**Activities Performed:**

**Audit courses on a routine basis to evaluate their teaching methodology or pedagogy:** Currently, the department heads of the UoG-CVMAS in collaboration with the *CVMAS Education Quality Assessment and Auditing* coordinator, evaluated all the courses in the College and the respective faculty that teach them on a regular basis. This evaluation is performed through student evaluations, peer evaluations, and supervisor evaluations at the end of each semester before final examination is administered to the students. This is often practiced using a standard evaluation form developed at the College. No Twinning specific evaluation was performed at CVMAS.

Action Item	Activities Planned under the Action Plan
<div> <div> <div>✓</div> <div>X</div> </div> <p>27. Provide more teaching CE courses or advanced training opportunities for the UoG faculty.</p> </div>	Initially UoG faculty visiting OSU will create training opportunities to share teaching methodologies and pedagogical techniques. The main goal is to eventually create a future Ethiopian centered program on veterinary medicine education.

#### Activities Performed:


**Provide more teaching CE courses or advanced training opportunities for the UoG faculty:** The Faculty Exchange program was originally planned to include 8 UoG-CVMAS faculty to visit OSU, so they could be exposed to advanced teaching methods, pedagogical techniques, all while acquiring additional skills/knowledge on specific subject areas, to be used in the design and development of new course materials, or to improve current courses. However, only 2 faculty had the opportunity to visit OSU due to unforeseen circumstances, which prevented further faculty exchanges.



Action Item	Activities Planned under the Action Plan
<div> <div> <div>✓</div> </div> <p>28. Identify sources of funding for continuing education and research to improve lack or limited experience in certain subjects by the UoG faculty.</p> </div>	The UoG College of Veterinary Medicine will establish an Office of Research and Publication. This office will work in identifying such opportunities and potential funding sources to support such training and research opportunities.

#### Activities Performed:

**Research Support Office:** A *Coordination Office for Research and Publication* has been established at the UoG-CVMAS and efforts have been done in developing proposals to pursue further funding both at the University level as well as from external sources. This office is in charge of identifying potential sources of funding for continuing education and research and providing support and training to the faculty looking to improve their lack or limited experience in regard to funding search.

Action Item	Activities Planned under the Action Plan
 29. Establish an Ethiopian faculty exchange program across the Veterinary Colleges.	A proposal for faculty from Ethiopian veterinary schools to rotate through other schools in order to exchange and advance knowledge and increase both experience and collaboration opportunities will be created. Funding for this activity will be pursued at the central government level.


#### Activities Performed:

**Establish an Ethiopian faculty exchange program across the Veterinary Colleges:** Although currently there is no well-organized faculty exchange program among veterinary schools in Ethiopia, UOG-CVMAS often invites professors from different universities to: 1) deliver courses for undergraduate and postgraduate programs; 2) serve as external examiners of students graduating thesis, and 3) deliver seminars on specific topics related to the WOAHA Day 1 Competencies here described. Similarly, UoG faculty visit other universities and colleges to share their experience in both specific technical topics or on the development and implementation of their new veterinary curriculum.

The Ethiopian Veterinary Association currently supports the *Veterinary Deans' Forum* meetings, which bring together the Deans from all Ethiopian VEEs to discuss academic and curricular issues. They also fund *faculty experience sharing visits* among VEEs in Ethiopia.

## Infrastructure


- ▶ **GAP:** It was reported that many of the WOAHA/OIE Competencies are primarily theory-based teaching, especially those with a clinical component. Some of the reasons listed were:
  - There are no diagnostic or service laboratories at the university and the teaching laboratories are largely didactic due to limited resources.
  - There are not (or are very limited) field diagnostic tests (i.e., CMT) for practice and teaching purposes, as well as limited supplies and materials for field training (i.e., sample collection).
- ▶ **GAP:** It was also identified one recognized gap present across the majority of competencies, the newly UoG veterinary graduates' ability to identify updated national and international sources of information relevant to Day-1 Competency subjects was considered insufficient or completely lacking.

Action Item	Activities Planned under the Action Plan
 30. Identify sources of funding to develop diagnostic or service laboratories, which could be used to expand applied teaching.	<p>Two main approaches will be utilized:</p> <ul style="list-style-type: none"> <li>A. UoG-CVMAS will develop a proposal(s) to be presented to the Ethiopian Central Government to request annual funding to develop such labs.</li> <li>B. UoG would also develop a proposal for WOAHH/OIE to perform a lab twinning program.</li> </ul>

**Activities Performed:**

**30.A. Internal and State Funding:** Currently the UoG allots a recurrent budget to procure laboratory consumables and processes the procurement centrally. But most of the time, important test kits and supplies needed for the teaching and training of veterinary students are not available due to lack of availability in the domestic market or limited budget. No proposal has been developed to be presented to the Ethiopian Central Government to request the establishment of service laboratories.

**30.B. Lab Twinning program:** A Laboratory twinning program focused on establishing diagnostic or service laboratory capacity at the UoG was not submitted as other major priorities took precedent.

Action Item	Activities Planned under the Action Plan
 31. Improve student access to information.	<p>Two main approaches will be utilized:</p> <ul style="list-style-type: none"> <li>A. The UoG-CVMAS will create a computer center in the new academic building.</li> <li>B. The UoG will acquire tablets for students. The FVM will discuss with School of Medicine, as they have already identified funding streams for this purpose.</li> </ul>

**Activities Performed: (See also Action Item #16)**

**31.A. Improve student access to information:** The UoG has built a library dedicated to veterinary students with the necessary digital facilities to allow their students access to digital and online information. The CVMAS also developed an *Education Portal System* that helps teachers to share educational materials/resources and interact with students. Through the portal system, students can access reading and reference materials, lecture notes, among other educational tools used on their education and training.

**31.B. Personal Electronic Equipment:** In the original plan, it was envisioned that an acquisition of tablets would allow the students better access to the information and increase potential interactivity with the teaching material. However, the UoG-CVMAS was not able to secure funding to procure tablets at this time.



Action Item	Activities Planned under the Action Plan
<p>✓ 32. Teach students to search for up-to-date information online.</p>	<p>This will be accomplished by listing preferred internet references and sources throughout the curriculum in the syllabi as appropriate.</p>

**Activities Performed: (See also Action #16 and 31)**

**Online Search Education:** List of preferred internet references and other digital sources to access journals were made available to the students throughout the curriculum in the course content and also uploaded to the library server for offline access.





# Appendices



# **Appendix A**

## **UNIVERSITY OF GONDAR – THE OHIO STATE WOAH TWINNING PROGRAM CLOSING CONFERENCE**





Bernard Gagnon  
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**THE OHIO STATE  
UNIVERSITY**

COLLEGE OF  
VETERINARY MEDICINE



World Organisation  
for Animal Health  
Founded as OIE

# UoG-OSU Twinning Project **CLOSING CONFERENCE**

Promoting WOA Day 1 Competencies  
to Improve the Quality  
of Veterinary Education in Ethiopia

September 23, 2022  
Gondar, Ethiopia





Closing Conference

# PROGRAM

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**SEPTEMBER 23, 2022**

Gondar, Ethiopia

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WELCOMING REMARKS

DR. SHIMELIS DAGNACHEW

OPENING SPEECH

DR. ASRAT ATSEDEWOYNE

MINISTRY OF EDUCATION  
KEYNOTE SPEECH

MOE REPRESENTATIVE

MINISTRY OF AGRICULTURE  
KEYNOTE SPEECH

DR. FIKRU REGASSA

TWINNING PROJECT LEADER  
KEYNOTE SPEECH

DR. ARMANDO HOET

DEVELOPMENT & IMPLEMENTATION  
OF THE UOG-OSU VET EDUCATION  
TWINNING PROJECT

DR. ACHENEF MELAKU

ACHIEVEMENTS OF UNIVERSITY OF  
GONDAR-OHIO STATE UNIVERSITY  
VETERINARY EDUCATION TWINNING  
PROJECT ON CURRICULUM  
DEVELOPMENT AND  
IMPLEMENTATION

DR. TSEGAW FENTIE

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Closing Conference

# PROGRAM

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**SEPTEMBER 23, 2022**

Gondar, Ethiopia

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CONTRIBUTION OF THE TWINNING  
PROJECT TO THE NATIONAL DVM  
CURRICULUM

DR. SHIMELIS DAGNACHEW

CAPACITY BUILDING/ONE HEALTH  
SUMMER INSTITUTE

DR. SELESHE NIGATU

IMPACT OF THE UNIVERSITY OF  
GONDAR-OHIO STATE UNIVERSITY  
STUDENT EXCHANGE PROGRAM ON  
DAY 1 VETERINARY  
GRADUATES/VISITORS

DR. ANDNET YIRGA ASSEFA

ENGAGEMENT OF VETERINARY  
MEDICINE UOG STUDENTS IN  
EXTRACURRICULAR ACTIVITIES AND  
IMPACT ON VETERINARY  
EDUCATION PERFORMANCE

DR. REHMET KEMAL

IMPACT OF TWINNING ON  
EMPLOYMENT IN THE  
PRIVATE SECTOR

DR. FASIL MESAFINT

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Closing Conference

# PROGRAM

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**SEPTEMBER 23, 2022**

Gondar, Ethiopia

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IMPACT OF THE UOG-OSU OIE  
TWINNING PROGRAM ON  
EMPLOYMENT IN THE  
PUBLIC SECTOR

DR. TAMIRU TESSEMA

IMPACT OF THE UOG-OSU OIE  
TWINNING PROGRAM ON OTHER  
ETHIOPIAN VETERINARY SCHOOLS

DR. BIRESAW SEREDA

IMPACT OF THE UOG-OSU OIE  
TWINNING PROGRAM ON THE  
VETERINARY PROFESSION IN  
ETHIOPIA

DR. TEWODROS TESFAYE

THE FUTURE OF  
OSU-UOG COLLABORATION

DR. AMANDA BERRIAN

WOAH/OIE PERSPECTIVE ON THE  
TWINNING PROJECT

DR. DAVID SHERMAN

AWARD CEREMONY FOR  
TWINNING PROJECT TEAM

DR. GETACHEW ASSEFA

CLOSING REMARKS

DR. KASSAHUN TEGEG

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# WELCOME MESSAGES

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Dr. Armando Hoet  
Director, Veterinary Public  
Health Program

The Ohio State University

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The idea for the Twinning Program between the veterinary schools at University of Gondar and The Ohio State University began in the fall of 2014 when I met with Dr. Alain Dehove, the Finance Director of the World Organisation for Animal Health (WOAH, formerly OIE) and his team at the WOAH Paris headquarters. When we were discussing a proposed partnership between these two universities, we were focused on helping to design a program to help produce young veterinary professionals that were better prepared to serve in their country's veterinary services. At the time, when we were presenting this very modest goal, we could never have imagined how successful the project would be and the impact that it would have, not just at University of Gondar, but throughout Ethiopia and around the world. This conference, "Promoting WOAH Day 1 Competencies to Improve the Quality of Veterinary Education in Ethiopia," will feature a wide range of speakers, who will discuss the achievements of the program and important lessons for other institutions wishing to pursue a similar process to improve the quality of their Day 1 veterinary graduates following the WOAH guidelines.

One of the key achievements of the Twinning program was the development of

the Assessment and Implementation of Day 1 Competencies (AID-1C) model, which guides veterinary schools through the process of assessing their program based on the WOAH guidance documents on veterinary education. This process was developed and applied at University of Gondar and resulted in the 2017 launching of a new veterinary curriculum that was harmonized with the WOAH Day 1 Competencies and WOAH Veterinary Core Curriculum. This new curriculum was the first of its kind, not only in Ethiopia, but in Africa as a whole (article link: <https://doi.org/10.3138/jvme-2019-0115>), and it went on to serve as the model for the new Ethiopian National Veterinary Curriculum, which was approved for use throughout the country in 2019.

Through the WOAH/OIE Twinning program we also successfully implemented 6 different continuing education courses with multiple editions over the years, that provided advanced training for over 150 academic staff from the UoG and other Ethiopian veterinary schools, as well as representatives from different government agencies and practicing veterinarians. The impact of these trainings extended well beyond the University of Gondar; one in four

continuing education participants was from other academic institutions and veterinary schools across Ethiopia. Many of them are probably attending this conference today.

While this event marks the formal end of the Twinning Program at the University of Gondar, the strong partnership between The Ohio State University and the University of Gondar will go on, continuing to support efforts to ensure that Ethiopian veterinary graduates are well prepared to protect human and animal health and provide strong support the veterinary services of the nation. For example, in June 2022, we successfully launched the “Needs Assessment Survey for Implementing the 2019 Nationally WOAHOIE Harmonized Veterinary Curriculum in Ethiopia” in partnership with the UoG. The survey is the first step in a two-step process consisting of 1) a survey of all veterinary colleges in Ethiopia to identify the challenges that they face in implementing the new national curriculum and 2) an in-person workshop to share results and prioritize possible solutions using the Focus Forward methodology. The results of the Needs Assessment will be used to inform the national strategy to support all Ethiopian veterinary colleges in effectively implementing the new national curriculum harmonized with the WOAHOIE Day 1 Competencies.

Even as the Needs Assessment is expanding the impact of the Twinning Program in Ethiopia, the techniques developed at the University of Gondar are also being applied to veterinary education programs more than 5000 km away in Southeast Asia. In June 2022, representatives from 37 SE Asian veterinary schools were trained on the AID-IC methodology. The workshops took place in three countries (Cambodia, Thailand, and

Philippines), eight countries participated, and we welcomed over 70 participants representing 37 Veterinary Education Establishments in SE Asia. In October, the first three SE Asian veterinary schools will perform curriculum assessments using the AID-IC methodology, and representatives from the remaining 34 schools will attend as observers, with the goal of completing the same process in their own institutions in the future. This is just one example of the global impact of the Twinning program. The main objectives of the UoG-OSU Twinning program were to 1) Strengthen Ethiopia’s Veterinary Services by aligning the DVM curriculum with the WOAHOIE Day 1 Veterinary Competencies and WOAHOIE Veterinary Education Core Curriculum, 2) Develop a standardized assessment tool to identify training gaps in veterinary education, 3) Increase the number of competent, newly trained veterinarians whose education fulfill the WOAHOIE Day 1 Competencies to promote and protect the health of people, animals, and the environment, and 4) Provide continuing education and professional development opportunities to improve the current veterinary workforce.

We can say without doubt we accomplished those objectives and more, as you will see in our conference today. However, much work remains to be done, and we will continue working with all our partners to keep increasing the number of competent, newly-trained veterinarians in Ethiopia to support the national veterinary services and help to improve the well-being of the country’s human and animal populations.

# WELCOME MESSAGES

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Dr. David Sherman  
Programme Coordinator,  
Veterinary Education Establishment  
Twinning Programme



## World Organisation of Animal Health

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The World Organisation for Animal Health (WOAH) (founded as OIE) was established in 1924 as the intergovernmental organization responsible for improving animal health worldwide. To safeguard animals from disease and prevent the spread of zoonoses to humans, WOAH directs considerable energy and resources toward helping its 182 Members strengthen their national veterinary services (VS). WOAH recognizes that the foundation of a strong VS is well qualified and capable professional staff with the necessary knowledge, skills, and attitudes to perform effectively and efficiently.

Early in the implementation of the WOAH Performance of Veterinary Services (PVS) Pathway, which is WOAH's platform for providing support to Members for strengthening their veterinary services, PVS Evaluation mission assessments indicated that in many countries, the training of veterinarians was inadequate. In response, WOAH organized the 1st Global Conference on Veterinary Education in Paris, France, in October 2009. The conference addressed inequalities and shortcomings in veterinary curricula worldwide and identified the need for the development of minimum competencies expected of all graduate

veterinarians in all countries in both private and public components of the VS. In accordance with the recommendations adopted at that conference, WOAH convened an ad hoc group on veterinary education in 2010 with the support of selected deans of Veterinary Education Establishments (VEEs) from the five continents. In 2012, the ad hoc group produced the OIE Recommendations on the Competencies of Graduating Veterinarians ('Day 1 graduates'). This set of recommendations provides an overview of the competencies necessary for the Day 1 veterinary graduate to be adequately prepared to participate in the public good functions of national VS at the entry level. In 2013, the ad hoc group produced the Veterinary Education Core Curriculum OIE Guidelines. WOAH developed these guidelines to serve as a companion to its recommendations on the competencies of graduating veterinarians ('Day 1 graduates') to assure the quality of both public and private sector veterinarians contributing to the public good functions of national VS.

These guidelines are meant to serve as a tool for VEEs to use when developing curricula to educate veterinary students to the expected level of competency. In this

context, it was also intended that use of the documents would help to identify a reference threshold for initial training of veterinarians, as the initial training periods for veterinarians vary widely around the world. Thus, an outcomes-based approach, with the development of curriculum to deliver specific competencies for graduating veterinarians, was promoted.

The WOAHO Veterinary Education Establishment (VEE) Twinning Programme was also established in 2013. The overall objective of the program is to create a better understanding of the threshold of initial veterinary education worldwide so that assistance can be directed toward increasing the capacity of VEEs that are falling below this threshold. This can be achieved by strengthening compliance with the WOAHO guidelines and recommendations on veterinary education through the “twinning” of VEEs. The WOAHO VEE Twinning Programme thus provides the opportunity for VEEs in developing and in-transition countries to modernize their curricula and the ways in which they are delivered. Each twinning project under the program is a partnership between a recognized (and preferably accredited) VEE, known as the Parent, and a beneficiary VEE, known as the Beneficiary.

To date, 14 VEE Twinning Projects have been initiated with 12 of them so far been completed. These projects have yielded clear benefits to both the Parent and Beneficiary partners involved and have produced noteworthy outcomes in curriculum reform and teaching methodologies. Many of these successes have been described in a special issue of the Journal of Veterinary Medical Education on the WOAHO Veterinary Educational Twinning Programme (Volume 47 – Supplement, September 2020). The success of the Twinning between the Ohio State

University and the University of Gondar is especially noteworthy. As you will hear during this closing conference, not only did the partners achieve all of their intended objectives for curriculum reform, but the curriculum improvements developed at Gondar as a result of the Twinning project are being adopted by all the veterinary faculties in Ethiopia and the tools developed for curriculum assessment during this Twinning project are now being applied for curriculum assessment and reform in other regions of the world. From the WOAHO perspective, this Twinning has been a remarkable success. Congratulations to all participants for a job well done.



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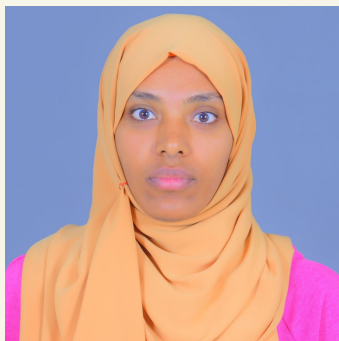
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# ABSTRACTS

## **1 Development & Implementation of the UOG-OSU Veterinary Education Twinning Project | Dr. Achenef Melaku**

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In the last 15 years, there was a rapid expansion of veterinary education establishments in Ethiopia which was not supported by the necessary teaching facilities and capacities. To address such gaps, the College of Veterinary Medicine and Animal Sciences (CVMAS) at the University of Gondar was trying to boost its teaching capacities. Building local or international collaboration among universities and research institutes has been given much attention since it is helpful to acquire experiences and share resources. The college was looking for collaborating opportunities and pursuit a veterinary education twinning project with The Ohio State University (OSU). Hence, this presentation will elaborate on the development and implementation of the project. In 2014, the College learned about WOAHOIE Twinning Program and immediately established a committee and prepared a very rough proposal which was

followed by searching for a parent institute in developed countries as per the guideline of the World Organisation for Animal Health (WOAH/OIE). Professors from OSU volunteered to work with us and the final submitted proposal was prepared and submitted to OIE by OSU in early 2015. By May 2015 the project was approved and started its immediate implementation. Several achievements and successes were registered through the implementation of the project. It was commenced by identifying gaps and formulating and implantation of solutions. The veterinary college at UoG and other Universities in Ethiopia should work to scale up the impacts of this program by implementing recommendations to get the sustainable improvement of veterinary education in the country.

## **2 Achievements of University of Gondar-Ohio State University Veterinary Education Twinning Project on Curriculum Development and Implementation | Dr. Tsegaw Fentie**

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The World Organisation for Animal Health (WOAH, formerly OIE) acknowledges the quality of veterinary education in many of the developing countries is deficient to develop the aptitude and proficiency of veterinary graduates to work across the multiple disciplines of the profession. The WOAHOIE provides the requirements needed for graduating veterinary professionals to be competent in the delivery of animal health services. However, significant differences in veterinary curricula across countries, attributable to differing animal health priorities and predominant types of veterinary practice, provide a challenge for veterinary education establishments to address these competencies adequately. As part of the WOAHOIE's Veterinary Education Twinning Program, the University of Gondar College of Veterinary Medicine and Animal Sciences (UoG-CVMAS) in Ethiopia and College of Veterinary Medicine in the Ohio State University (OSU) undertook a curriculum mapping and gap analysis to assess the extent to which the veterinary curriculum addresses WOAHOIE's Day 1 Competencies for graduating veterinarians. Results of the analysis indicated that three WOAHOIE Day 1 Competencies (General

Certification Procedures, Inspection and Certification Procedures, and International Trade Framework) were missed; four WOAHOIE competencies (Risk Analysis, Outbreak Investigation and Management, Environmental Health and Biological Waste Management, Drug Withdrawal Times and Drug Residues) were missed major WOAHOIE contents; and three WOAHOIE competencies (Animal Welfare, Biostatistics and Communication Skill) were misaligned/taught in different sequences. Gaps in the depth and breadth of instruction were found for a number of competencies in WOAHOIE specific and advanced competency categories. These findings indicated the need for addressing the gaps in the UoG veterinary medicine (DVM) curriculum and develop human resource. As a result, the UoG-OSU twinning project worked out on the development and implementation of an WOAHOIE standard curriculum that efficiently meets the national and international animal health requirements. Faculty and student development through exchange and continuous professional development programs were in place to motivate and strengthened the veterinary educational process in the UoG-CVMAS.

# ABSTRACTS

## 3 Contribution of the UoG–OSU Twinning Project to the National DVM Curriculum | Dr. Shimelis Dagnachew

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The Ethiopian higher education curricula have been continuously revised to standardize and improve quality for the production of competent professionals. The DVM program in Ethiopia delivered in all veterinary schools/faculties/colleges are used a harmonized curriculum. However, still each veterinary college's curriculum is somehow unique as there is about 20% variation among them due to specific courses that are included based on geographical locations and/or variations in practical placements of the students. For instance at the UoG, our DVM curriculum has been implementing the Off Campus Training courses with practical placement conducted out of the campus in potential veterinary facilities including veterinary clinics, veterinary laboratories, export abattoirs, vaccine production, and other livestock technology institutes; which can be significantly different from other Colleges in the country. Furthermore, the DVM curriculum in UoG was revised in collaboration with the curriculum twinning project of OSU supported by WOAHOIE. In the last few years, the UoG has incorporated courses that fill the identified gaps to attain the Day 1 competencies recommended by WOAHOIE. Accordingly, CVMAS–UoG has been implemented the Day 1 WOAHOIE competency revised curriculum since 2017. The first batch of students trained using the revised curriculum will be graduating in August 2022. Therefore, the objective of this presentation is to assess the contribution of the WOAHOIE Day 1 competency based UoG – DVM curriculum for the harmonized national curriculum in Ethiopia. The assessment was done by desktop review of documents and observation of reflections from curriculum review process by instructors, committee members, and various stakeholders. The assessment of the contributions of UoG twinning revised curriculum has got an opportunity to be used as a benchmark and endorsed in other veterinary colleges/schools during the national curriculum revision program by MOSHE (Ministry of Science and Higher Education, 2019/20). In the national harmonized curriculum review process about 100% of the courses content incorporated in UoG – WOAHOIE Day 1 competency based revised DVM curriculum were endorsed.

This review process underwent at different levels and stages of discussion by the dean's council meeting for the veterinary education establishment recommendations and curriculum review committee from represented colleges. According to the suggestion and comments forwarded three universities were assigned for the revision of the national DVM curriculum including University of Gondar, Bahir Dar University and Addis Ababa University. The main components included in the review process were including common courses, improving the course contents in line with WOAHOIE Day 1 competencies, adjusting the level and sequence of courses. Specifically, the following actions were applied; incorporation of new courses, revising the course content by adding new chapters, merging of related courses and deleting of less relevant courses. In the incorporation of new courses and revising the course contents the WOAHOIE Day 1 competencies have given priority and well endorsed. In conclusion, all courses and contents included in the UoG – revised DVM curriculum twinning project implemented since 2017 were incorporated in the national harmonized and revised DVM curriculum. Consequently, the revised harmonized DVM curriculum is currently implemented in 13 universities of Ethiopia and the experiences from University of Gondar revised WOAHOIE Day 1 competency curriculum was used as a benchmark for the harmonized DVM curriculum in Ethiopian veterinary education.

# ABSTRACTS

## **4 Capacity Building/One Health Summer Institute | Dr. Seleshe Nigatu**

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The University of Gondar–Ohio State University collaborative Summer One–Health training is one of the exemplary collaborative professional development programs which created ample opportunities for students, faculties and researchers. Summer one health program provides multidisciplinary, short term need based trainings for UoG students and academic staff and experts in line sector offices (Ministry of Agriculture, Ministry of Health, National and Regional laboratories, etc.) and other universities since 2012. In this program more than 700 professionals were trained in various courses and more than 8 projects were implemented in collaboration with OSU. One of the activities of the WOAHOIE supported UoG–OSU Veterinary Education Twinning Project was to provide continuous education to UoG senior undergraduate and postgraduate students and teaching staff on selected courses related to WOAHOIE day–1 competency.

Since 2016, in addition to UoG veterinary education curriculum development, the project supported continuous professional development trainings in the following topics; international trade, risk analysis, fundamentals of animal welfare, career and professional development in veterinary medicine, modeling foodborne and zoonotic disease, concepts of economics and epidemiology in agricultural development. Senior veterinary medicine students and over 150 professionals from UoG and other universities and institutions were trained. These courses were helpful to make UoG faculties familiar with WOAHOIE standards and proper implementation of curriculum and to motivate veterinary medicine students and improve their competencies. Such a program shall be encouraged and get full support from the government to alleviate quality education challenges that may arise from knowledge gap and poor infrastructure.

## **5 Impact of the UoG–OSU Student Exchange Program on Day 1 Veterinary Graduates/Visitors | Dr. Andinet Yirga Assefa**

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Student exchange programs are among the strategies implemented by universities to develop students' intercultural skill and international knowledge. The University of Gondar–Ohio State University (UoG–OSU) student exchange program was conducted from October 31 – November 11, 2016 and from April 1–14, 2018 as a main strategy to achieve the objectives of UoG–OSU Twinning Program. A total of 16 clinical year UoG students were involved in two rounds. This presentation describes the impact of the exchange program on the participants' motivation and employment and the role of visitors in advancing veterinary education and veterinary service in Ethiopia. The exchange students attended one week on Veterinary Preventive Medicine education and one week focused on Public Health rotations twinned with final year OSU veterinary medicine students.

Over the two weeks stay at OSU, they attended different classes and they have visited different institutes, agencies, and productions systems across the State of Ohio. Up on their return, they shared their experiences to UoG veterinary medicine students, established student clubs, and are now working for different veterinary institutes as instructors or faculty. Overall, the exchange program was effective in improving the motivation of visitors and in injecting young graduates, having the experience of OSU, to different veterinary institutes where they can work to advance veterinary education and veterinary service in the country. Therefore, such student exchange program should be adopted in different veterinary schools of Ethiopia; however, it needs to have continuity and should involve higher number of students.



# ABSTRACTS

## Engagement of Veterinary Medicine Students in

### **6 Extracurricular Activities and Impact on Veterinary Education Performance, University of Gondar | Dr. Rehmet Kemal**

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Students' involvement in extracurricular activities is generally considered advantageous to their overall educational experience. Veterinary students experience high level of stress, with concerns about academic performance, workload, and the amount of time spent studying. This led them to experience higher levels of depression. Participation in extracurricular activities provide college students a variety of opportunity for better engagement in campus life within their institution associated with higher levels of retention through graduation, increased leadership capacity, student academic and career success, and generalized cognitive and social development. In the College of Veterinary Medicine and Animal Sciences, University of Gondar two student clubs, Veterinary Public Health and Veterinary Clinical Medicine are established and functional. These clubs allowed the involvement of students in community outreach beside the regular curriculum.

The clubs were organized by students who were exchange program participants in the UoG-OSU Twinning Program in 2016 and 2018 to motivate students to actively participate in extracurricular activities, which raises students' skill on veterinary services and create Day 1 competent veterinarian for the country. These clubs have done different tasks including student's clinical skill development, free veterinary services to the community such as rabies vaccination campaign, and awareness creation on animal welfare and zoonotic disease control and prevention. As a result of this, they could increase the motivation of students towards veterinary medicine, though the clubs encountered various constraints that hinder the quantity and quality of their activities. In general, the extracurricular programs like professional student clubs are very essential for university students and should be developed and implemented in all Ethiopian universities.

### **7 Impact of Twinning on Employment in the Private Sector | Dr. Fasil Mesafint**

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EthioChicken is one of the largest and leading poultry operations in Ethiopia that focuses on production and distribution of improved breeds of poultry to rural households of Ethiopia. EthioChicken is founded in November 2010 to revive failing poultry operations with huge expectations from the local government and community. Through the public private partnership, EthioChicken started to produce chickens to smallholder farmers in mid of 2011 with a vision of reaching every Ethiopian family with improved breeds to improve nutrition, empower women and create income to partners and rural farmers. Currently EthioChicken has seven breeder farms, three hatcheries and two feed production factories in Ethiopia. The company distributes around 26,000,000-day old chicks annually and crates job for 8,000 day old chick growers and 1700 professionals and non-professionals in the country among which 76 are veterinarians. EthioChicken works in close collaboration with Veterinary Medicine colleges/schools in a University-Industry linkage program where students are attached to the companies for their internship to exercise their practical education in farm management, biosecurity, and herd health planning.

The UoG-OSU Veterinary Education Twinning project plays significant role in producing competent veterinarians to fill the gap for national veterinary workforce. The company recruits veterinarians by merit/ based on their competence at Day 1. Among vet employees, over one-third, that is 36% (27 out of 76 vets) are graduates from University of Gondar, which is due to high performance of UoG veterinary graduates. The team of veterinarians is the backbone of the system and takes the riskiest responsibilities of raising chickens from 45 to 60 days which needs vaccination, brooding, management and effective medication. They are solving two issues for EthioChicken which are market linkage to farmers and growing chickens to a level that can survive in the smallholder farmers' management and feeding. In addition to their professional role as practitioner, the vets serve the company as area sales manager and as member of the regional and head office team. EthioChicken appreciates the impact of UoG-OSU project that supports the production of competence graduates to the level of the company satisfaction in particular and to the private sector in general.

# ABSTRACTS

## 8 Impact of UoG–OSU Twinning Project on Employment in the Public Sector | Dr. Tamiru Tessema

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In Ethiopia, the government is one of the primary employers of veterinarians, and government veterinarians provide the majority of veterinary care that production and working animals in Ethiopia receive. For this reason, one of the primary goals of the Twinning Program was to better prepare graduates to serve in this sector. The Veterinary Service Directorate in the Amhara Regional State works hard in fulfilling the national plan and efforts to improve the performance of the veterinary service.

The contribution of the UoG–OSU Twinning Project in the production of competent veterinary graduates in Gondar and other Ethiopian universities is indispensable in improving the veterinary workforce at a regional and national level. Dr. Tamiru Tessema will discuss his perspective on the Twinning Program and the training of veterinarians in Ethiopia at large.

## 9 Impact of the UoG–OSU OIE Twinning Program on Other Ethiopian Veterinary Schools | Dr. Biresaw Sereda

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Veterinary education in Ethiopia is expanding in the last two decades. However, the curriculum in most veterinary schools is derived from the pioneer institution, Addis Ababa University and harmonized across the schools. Although the curricula are harmonized, they lack WOAHOIE recommended Day 1 competency and sequence of course delivery is not as per to the existing guidelines as it was observed during curricular evaluation. The objective of this presentation is to evaluate the impact of UoG–OSU WOAHOIE twinning project on other veterinary schools in Ethiopia. In order to evaluate the impact of the Twinning Program on other veterinary schools in Ethiopia, a survey was developed and distributed to the fifteen schools.

The DVM curriculum is revised and harmonized considering the recommended WOAHOIE elements. Because of the Twinning Program, academic staffs of different schools came to understand about Day 1 competency and WOAHOIE recommended course delivery. Most schools incorporated One Health, Animal Welfare, Food laws and Trade, and Trans-boundary animal diseases, either as self-standing course or as chapter in Veterinary Public Health and Epidemiology for undergraduate programs. Thus, the impact of the Twinning Program is immense and could be more helpful if expanded to other veterinary schools taking the lessons from University of Gondar.

# ABSTRACTS

## **10** Impact of the UoG-OSU OIE Twinning Program on the Veterinary Profession in Ethiopia | Dr. Tewodros Tesfaye

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Veterinary professionals have been playing substantial roles in the improvement of the productivity and welfare of animals around the globe. Ethiopia with huge livestock resources has been expanding veterinary colleges throughout the country. On the other hand, the curriculum was not geared towards Day 1 WOAHO/OIE competencies, and the quality of graduates was low. To enhance the competency of graduates in particular and the profession in general, the University of Gondar – The Ohio State University Veterinary Education-Twinning Project has been implemented since 2015.

This presentation focused on the impact of the project on the veterinary profession in Ethiopia. The project extends from problem (gap) identification to designing and implementing strategies. The intervention activities were targeting the teaching process, the curriculum, students, academicians, researchers and veterinarians working in different colleges and institutes in the country. Hence, it brought tangible changes in the profession and the momentum has to be continued to bring sustainable changes and more societal benefits.

## **11** The Future of OSU-UOG Collaboration | Dr. Amanda Berrian

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Building on the momentum from the Veterinary Education Twinning Programme, the University of Gondar and The Ohio State University are continuing their partnership to help strengthen veterinary education throughout Ethiopia. Current activities, including the National Veterinary Curriculum Needs Assessment and Day 1 Platform for Veterinary Education, will be shared

# CLOSING REMARKS

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Dr. Tsegaw Fentie & UoG Team

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It is clear that veterinarians are vital in the Ethiopian society for not only treating and taking care of animals but also contribute to the human health and welfare. Enhancing quality veterinary education is a tool to produce Day 1 competent veterinary graduates in line to WOAHO/OIE standard to improve the performance of the Ethiopian animal health services. The veterinary education twinning project between the Ohio State University and University of Gondar has proven to be a winner and has allowed the College of Veterinary Medicine and Animal Sciences (CVMAS) to improve its DVM curriculum by aligning with the WOAHO/OIE's recommended day 1 competencies, introducing active learning methods and implementing continuing education program. The project's success was facilitated by mutual respect for different cultural views and open discussion of

perceived limitations and collaborative approaches, and it has achieved an impact well beyond University of Gondar. This is evidenced by veterinary schools/colleges in other Ethiopian universities that have adopted the UoG curriculum, active engagement of CVMAS dean and local coordinator in improving and harmonization of the national DVM curriculum. The motivation of students, improved performance of UoG veterinary graduates at day 1 and their prior employability by the private and public sectors is also a witness for the success of the project. I am confident enough that the momentum of this effective OSU-UoG collaboration will be sustain in implementing other ongoing and incoming projects.





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World Organisation  
for Animal Health  
Founded as OIE

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THE OHIO STATE  
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