

One Health Curriculum Development: A case from University of Gondar, Ethiopia

Seleshe Nigatu (Dr)

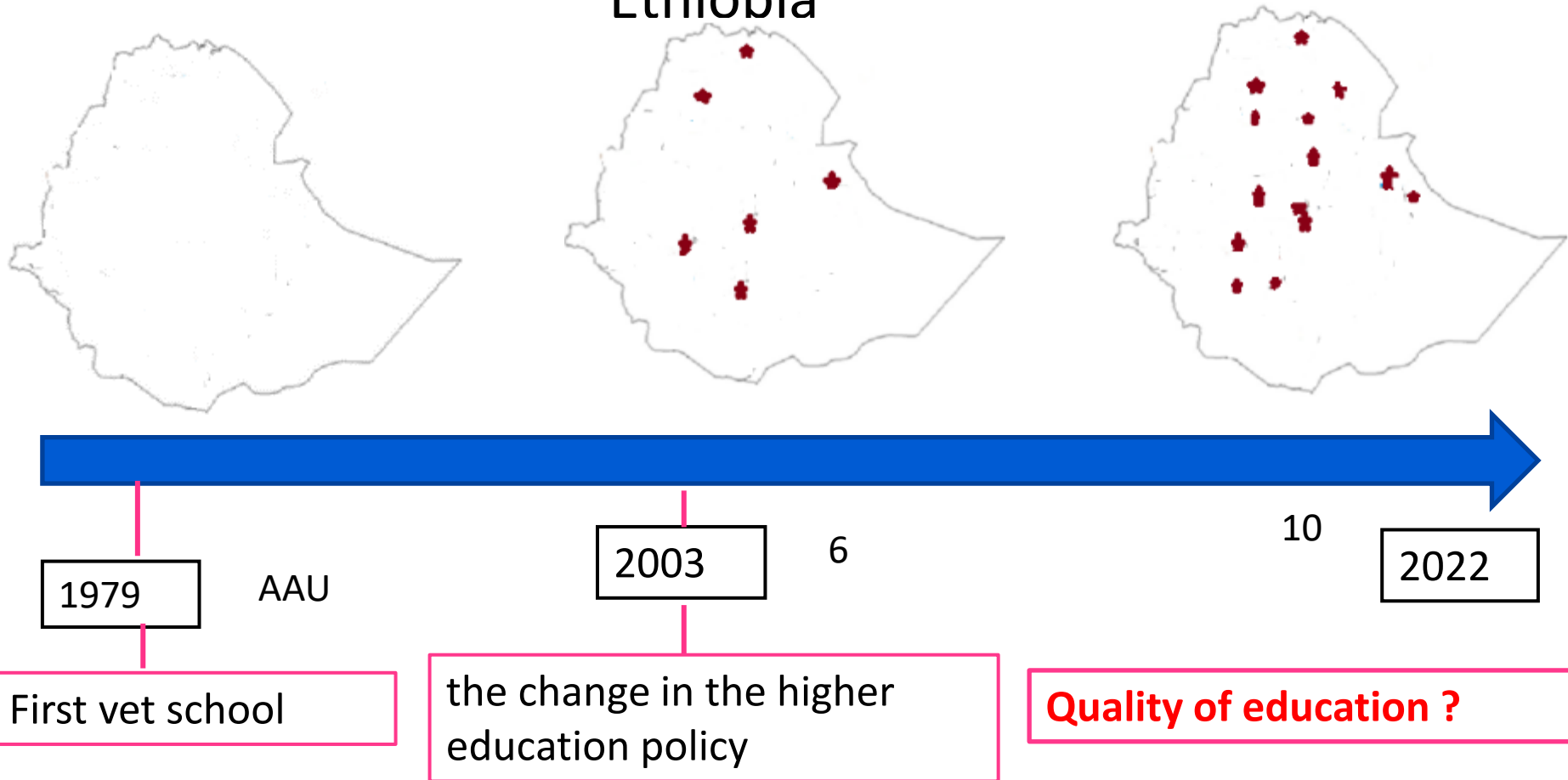
*Associate Prof of Vet Public Health
Faculty of Vet Medicine, University of Gondar
Ethiopia*

COHESA workshop on Building the Capacity of Higher Educational Institutions to Educate, Train, and Empower the Next Generation Workforce to Tackle One Health Issues, Gaborone, 22-24 November 2022

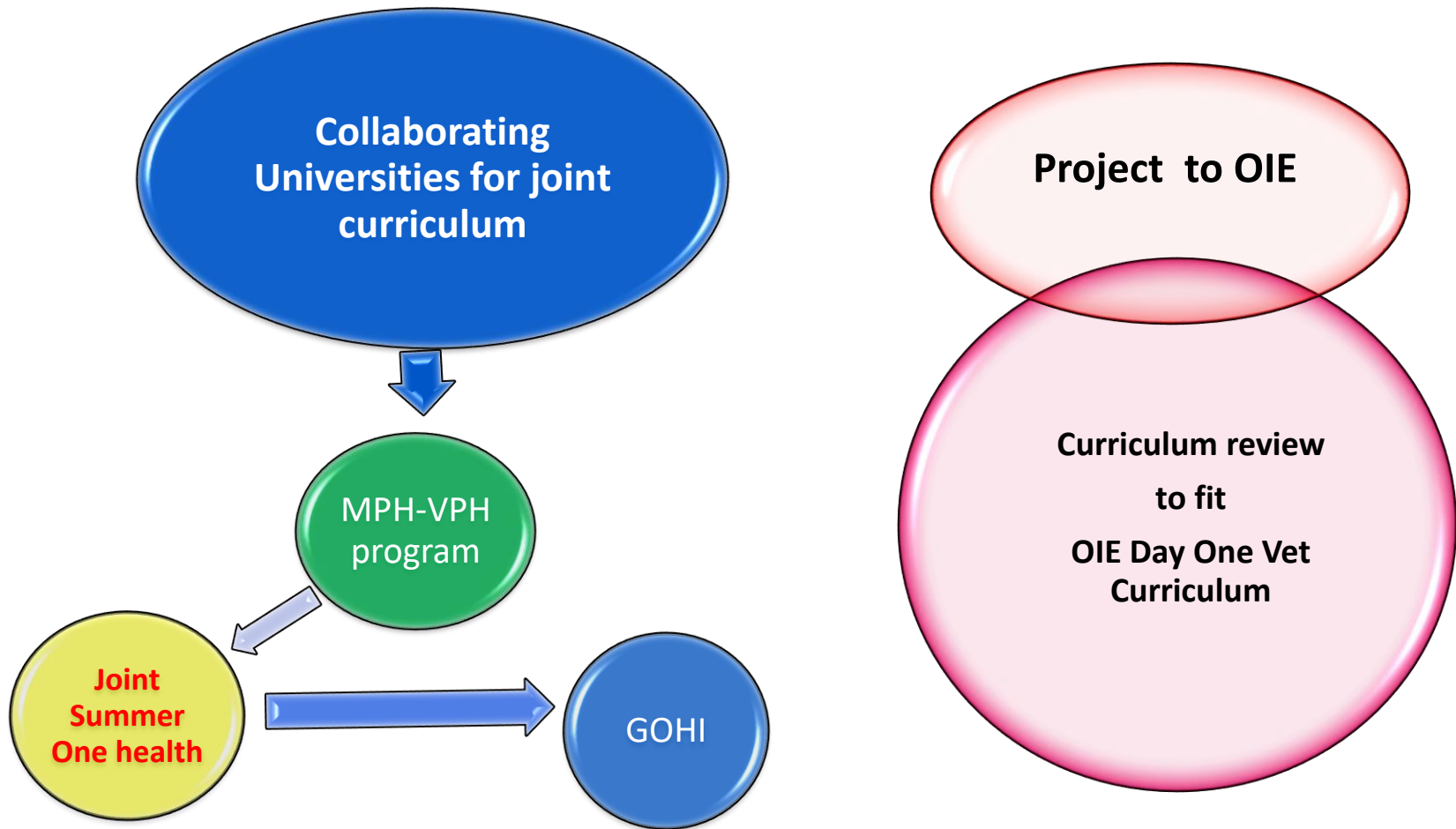


Driving force for the OH associated curriculum development

Increased Number of Vet education in Ethiopia



Two strategies followed to resolve the challenge



➤ **Sept, 2011**

- Joint partnership plan initiated following the 2010 MOU b/n OSU and UoG during the International Congress on Pathogens at the Human-Animal Interface – ICOPHAI in AA



Sept 2011

- **Professor William I. Brustein,**
 - Vice Provost for Global Strategies and International Affairs
- **Professor Lonnie J. King,**
 - Dean, Veterinary Preventive Medicine
- **Professor Larry S. Schlesinger,**
 - Chair, Department of Microbial Infection and Immunity
- **Prof Wondwsson**
 - Executive director for Global One health
- **HE Prof Afework Kassu,** and other UoG Staffs

MPH-VPH Program - 3 modules

Modules/Courses MPH-VPH program				
	MODULE NUMBER	MODULE TITLE	CREDIT HOUR	YEAR / SEMESTER
Block / Semester I	PuHe7011	Principles and Practice in Public Health	2	1/1
	PuHe7051	Basic Biostatistics and data management	4	1/1
	PuHe7061	Basic Epidemiology	3	1/1
	PuHe7031	Leadership, Management and Governance	3	1/1
	Total			12

	MODULE NUMBER	MODULE TITLE	CREDIT HOUR	YEAR / SEMESTER
Block/Semester II	VPHE701	Epidemiology of Zoonosis	3	1/2
	PuNu7012	Public Health Nutrition	3	1/2
	VPHE703	International Trade and Public Health	2	1/2
	VPHE704	Introduction to Molecular Epidemiology of Infectious Diseases	2	1/2
	Total			10



	MODULE NUMBER	MODULE TITLE	CREDIT HOUR	YEAR / SEMESTER
Block/Semester III	PuEh8042	Environmental Health	3	2/1
	VPHE702	Food Safety and Food-born Diseases	3	2/1
	PuHe8071	Research Method	3	2/1
		Total	9	
Block IV	PuHe8072	Thesis Work	6	2/2



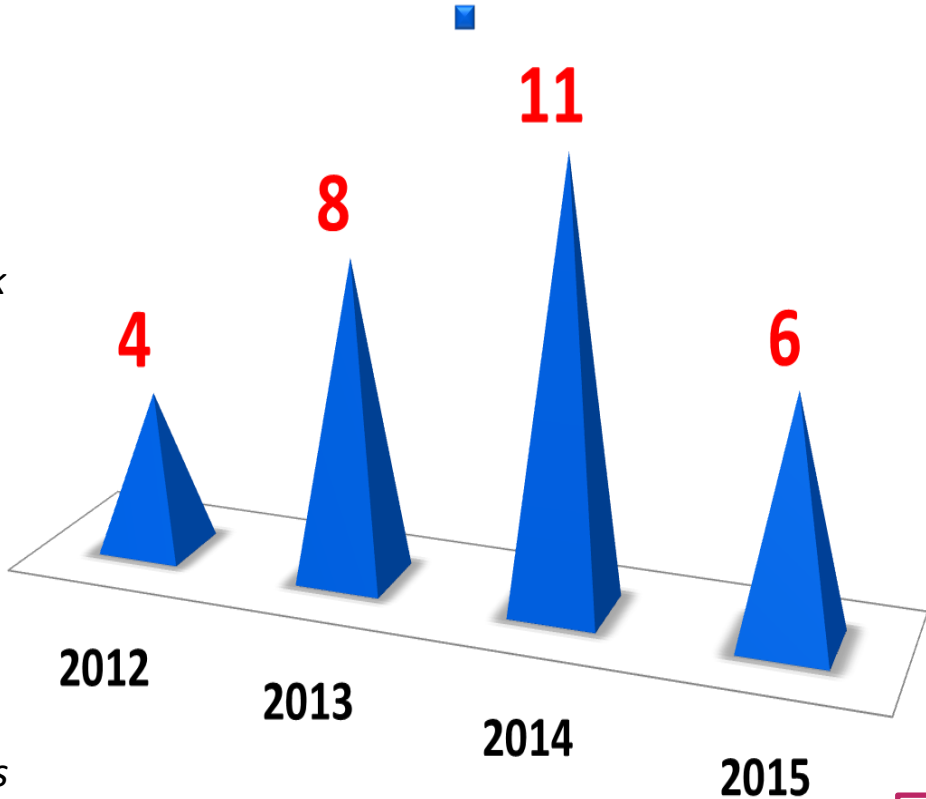


Capacity Building in line with Summer One Health program

Example in 2014

1. Neuroscience/Neurosurgery
2. Food Safety and Foodborne Diseases
3. Molecular Epidemiology of Infectious Diseases
4. Epidemiology of Zoonotic Diseases.
5. International Trade and Public Health/Risk Analysis
6. Optometry Training
7. Environmental Health/ Occupational Health
8. Research Methods and Applications
9. Ethical Issues in Biomedical Research/ Clinical Bioethics
10. Neonatal Resuscitation Care/ Help Babies Breathe (HBB)

Number of Modules Addressed

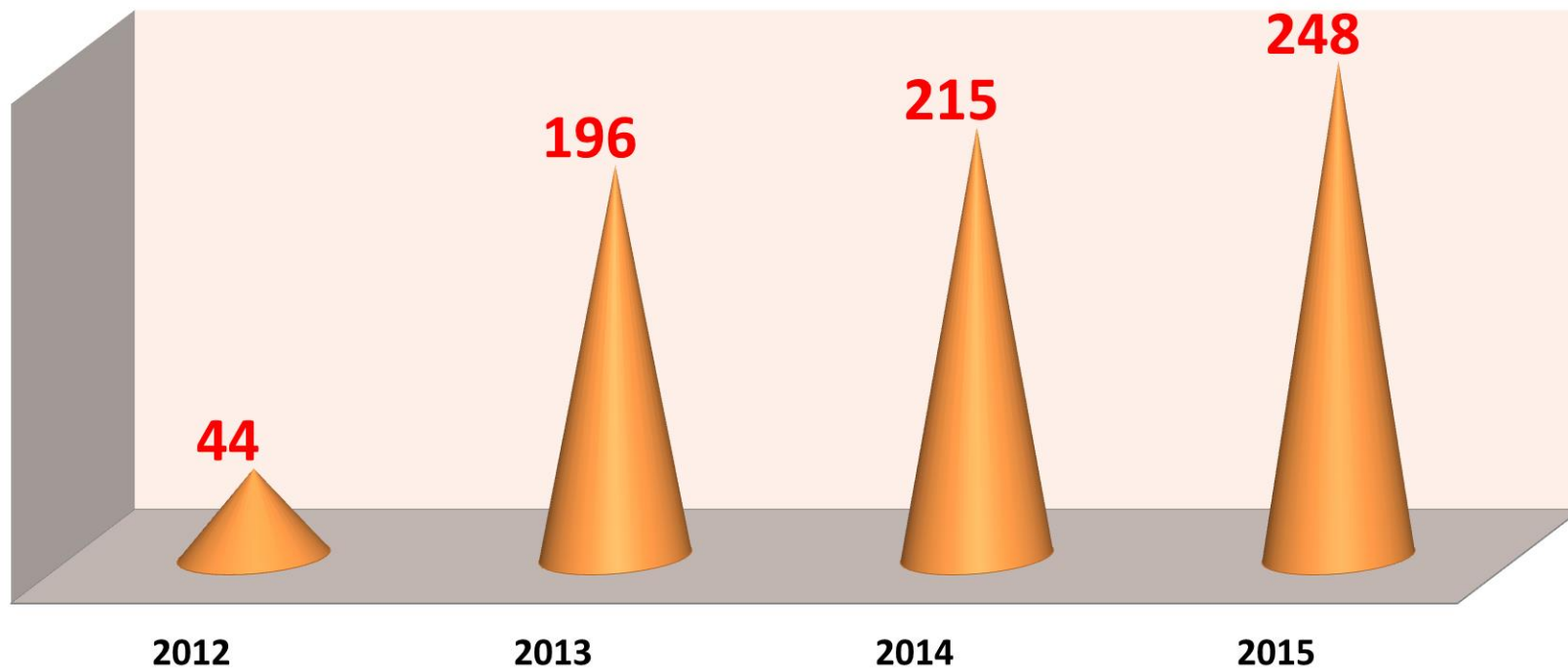


2022



Total trained

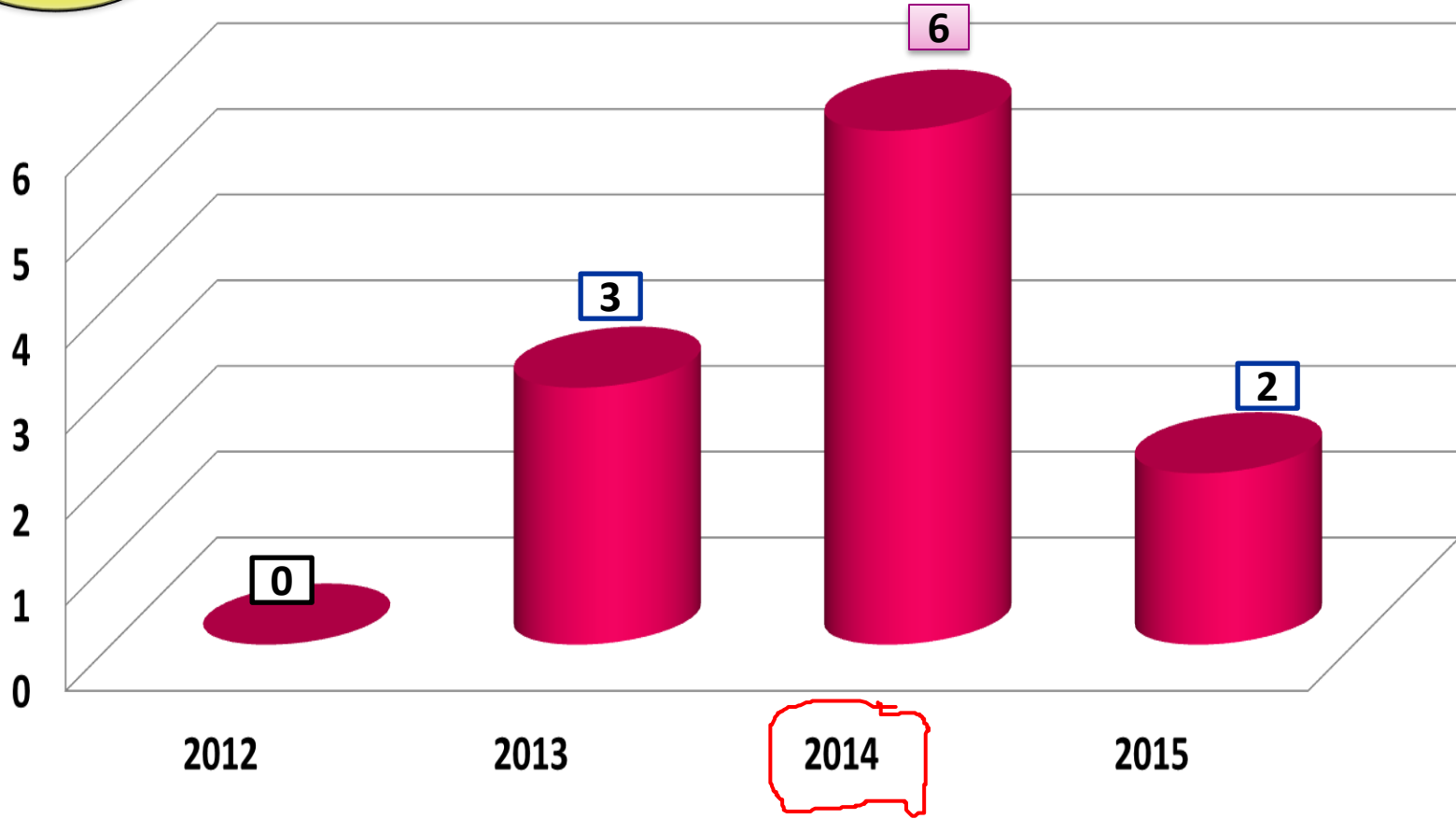
■ Total trained



Joint
Summer
One health

Projects initiated

■ Projects initiated



Year	Project/s Initiated	OSU Project PI's
2013 project ideas developed	1. Cervical Cancer Screening and Treatment	Prof Usha. Menon and colleagues
	2. Rabies Focus group Activities	UOG/EHNRI/OSU Team
	3. Environmental Hygiene/Food security/safety	Prof. M. Bisesi & S. Kumar
2014 projects	1. Cervical Cancer Screening and Treatment	Prof U. Menon/ T. Landers/ J. Kue/ J. Ford
	2. Rabies Awareness and Communication	Prof R. Wilson/ J. Bruskotter and N. Kraft
	3. Rabies High Volume Spay/Neuter hands on / skill Training	Dr J. O'Quin/ L. Hill
	4. Environmental Hygiene/Food Security/Safety	Prof . M. Bisesi
	5. BETHA- One Health App Project/ Electronic Capacity	Prof. W. Gebreyes
	6. Oie – Curriculum Twining Project	Prof Armando Hoiet
2015 projects	1. TB and brucellosis survey 2. Rabies surveillence	OSU professors in collaboration with UoG



➤ **Community Service**
(Ex:- On rabies control)

Awareness creation for:-

- Elementary and high School students
- Sector offic profesional, stackholders, relegiose leaders
- Knowledge dissimination



➤ **Information dissemination and international experience exchange**

Paper and posters presented in International conference on Pathogens of Human –Animal Interface (ICOPHAI), **Thailand** , Chiangmai & **Qatar** , Doha



Thailand , Chiang Mai



Qatar , Doha

Knowledge Dissemination

የእብድ ወሻ በሽታ ገዳይ ቢሆንም መከላከል ግን ይቻላል !!



ወሻችን ወደ አንስሳት ከሊኒክ በመውሰድ ያስከትቡ



በወሻች አንዳይነስሱ ይጠንቀቁ



በወሻች ከተነከሱ ቁስሉን ወዲያውኑ በውሀና በሳሙና በደንብ ይጠብቅ

በወሻ ከተነከሱ ወዲያውኑ በአቅራቢያዎት ወደሚገኝ ጤና ተቋም በመሄድ ተገቢውን ህክምና ማግኘት ይኖርብዎታል ::



ለተጨማሪ ማሳሪያ ተገቢው በተገለጹት ስልክ ቁጥሮች ይደውሉ:-
 የቢሮ +251-581-14-21-43 / +251- 588-11-90-72
 የአካላት ህክምና ፋኩልቲ : ጎንደር ዩኒቨርሲቲ :: <http://www.uog.edu.et/en>



- እንዴት ራሴንና ቤተሰብን ከእብድ ወሻ በሽታ መከላከል እችላለሁ?
1. በቤትዎ ያሉትን ወሻዎች ደመት ማስከተና በተጠይቀው ከትባብን እንዲወስዱ ማድረግ
 2. ከፍር አንስሳት፣ ባለቤት ከሌላቸው ወሻዎች ደመተች ጋር ለመጥራራ
 3. በመኖሪያ መስሪያ ቤቱ እኩባቢ ባለቤት የሌላቸው ወሻዎች እንዳይኖሩ መከላከል (ለምሳሌ ምግብ ለመስጠት ቆይቶ በሌላው ለማግኘት)
 4. ወሻዎን ደመት ማግኘት ከገቢ ወጪ እንዳይሆኑ መከላከል
 5. በወሻ ወይንም በፍር አንስሳ የተነከሰን እንስሳ ቆይቶ በሌላ እጅ (ወይንም ጎረቤት) ላይነክ ከተነከሰው ጋር አንስሳ ቆይቶ በውሃ ለውሃ ሳይሆን ማጠና ለአንስሳት ህክምና ባለሙያ ማሳየት
 6. ለሆኑ የሚያስጠይቁ እንስሳ መደህን ለማግኘት ወይንም ለሌላ ምክንያት ሲነክሱ እኩራገውን ግንታቁ ማድረግ ::

ወሻዎን መቆጣጠር?

ከትባት ከወላጅ ወሻ ለማወላወል በችሎች የመኖሪያው ከትባት የሚለጠው ወሻ ተወልዶ በሰለጠነው ወር ሲሆን ሁለተኛው በወር በወር ይሰለጠናል። ከዚያ በኋላ በየሰሎት መከተብ ይኖርባቸዋል :: ባጠቃላይ ግን ከሁለት ሰዎች ጀምሮ ከትባት መስጠት የበሽታውን ስርዓት ለመቆጣጠር ያስቸገሩ::



ወሻዎን በማስከተብ የእብድ ወሻ በሽታን በጋራ እንከላከል !!

የእብድ ወሻ በሽታ ገዳይ ቢሆንም መከላከል ግን ይቻላል !!
Rabies is Deadly But Preventable Diseases !!



ለተጨማሪ መረጃ
 ጎንደር ዩኒቨርሲቲ
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የእብድ ወሻ በሽታ ገዳይ ቢሆንም መከላከል ግን ይቻላል
“ የእብድ ወሻ በሽታን በጋራ እንከላከል !! ”
Rabies is a Deadly but Preventable Disease
“Together Against Rabies !! ”



World Rabies Day Celebration November 15, 2014 Faculty of Veterinary Medicine, University of Gondar, Ethiopia



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University of Gondar

THE OHIO STATE UNIVERSITY

World Organisation for Animal Health
 Founded as OIE

Current status of One-Health Capacity Building Program

GOHI

Headquarter located at Addis Ababa & taking the lead in coordinating this program

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Global One Health initiative

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Global One Health Summer Institute

2022 Online Courses

One Health Eastern Africa Research Training Program

Completed Projects

Global One Health Summer Institute

THE OHIO STATE UNIVERSITY ONE HEALTH Connecting human, animal, and environmental health

HOME ABOUT PARTNERS PROJECTS FUNDERS RESOURCES BLOG

iTunes U

Ohio State faculty and staff have created iTunes U courses related to their One Health projects. iTunes U is Apple's platform for mobile learning. The public catalog of content on iTunes U is the world's largest open education library and is available at no cost in more than 150 countries.

To download iTunes, visit <http://apple.com/itunes>. You do not need an iOS mobile device to access these courses.

Here are iTunes U public courses developed by Ohio State One Health Task Force members.

Instructor	Course
Worldwatch/Georgios	Antimicrobial Resistance of Antimicrobial Resistance
Patrick Kelly	Antimicrobial Resistance of the Eye
Christine O'Malley	Resilient, resilient and social media

RECENT BLOG POSTS

OneHealth @OhioState 2015: It's who connects the disease cannot expect to be cured

OneHealth2015: When the insect overflows, it comes on through the month

2015 @Ohio State #OneHealth Summer Institute: Better an egg this year than a chicken next year

2015 Summer Institute: When was it prepared, difficulties do not come

2015 Summer Institute: What happened to Saturday?

Created with the iThenticate Generator

THE OHIO STATE UNIVERSITY

for Animal Health Founded as OIE



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University of Gondar



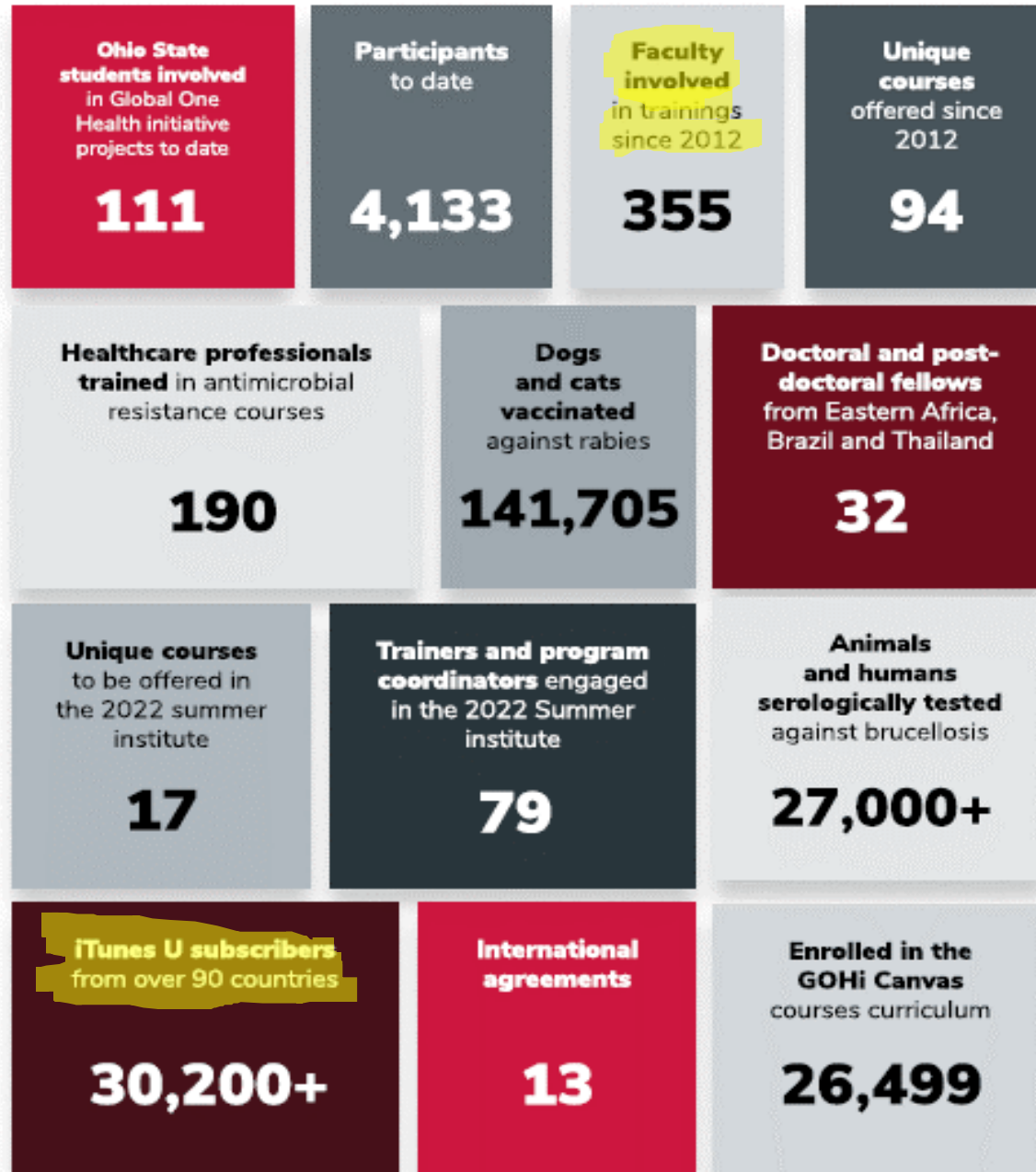
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for Animal Health
Founded as OIE

Impact Statistics 2022

- As a result of COVID-19
 - ⇒ Virtual trainings
 - ⇒ large number of participants
 - ⇒ More topics covered
 - ⇒ world class professors involved from their home



Project to OIE

**Curriculum Review
to fit
OIE Day One Vet
Curriculum Competencies**



Objectives of the Project

- ***Strengthen Veterinary Services*** by aligning the DVM curriculum with the OIE Day-1 graduates Competencies
- ***Identify training gaps*** in veterinary education
- ***Increase number of competent, newly trained vets*** to protect the health of animals, humans and the environment
- ***Provide continuing education and professional development*** to improve the current veterinary workforce

WOAH/OIE Day-1 Competencies

Specific Day-1 Competencies (11)

1. *Epidemiology*
2. *Transboundary animal diseases*
3. *Zoonoses (including foodborne)*
4. *Emerging & re-emerging diseases*
5. *Disease prevention and control*
6. *Food hygiene*
7. *Veterinary products*
8. *Animal welfare*
9. *Veterinary legislation & ethics*
10. *General certification procedures*
11. *Communication skills*

Advanced Competencies (8)

1. *Organization of veterinary services*
2. *Inspection and certification procedures*
3. *Management of contagious disease*
4. *Food hygiene*
5. *Application of risk analysis*
6. *Research*
7. *International trade framework*
8. *Administration and management*



The Project Plan

Task 1: Curriculum Assessment, Development, & Evaluation

Stage 1:
Curriculum
Assessment

Stage 2:
Curriculum
Development

Stage 3:
Curriculum
Implementation
& Evaluation

Task 2: Human Resource Development & Exchange

Stage 4:
Faculty
Development

Stage 5:
Student
Training

Stage 6:
Cross-Twinning
Collaboration

1. Curriculum Mapping and Gap Analysis



Faculty Retreat & Focus Forward Workshops



Participants;

- Deans of vet schools
- Stakeholders
- Faculties (UoG & OSU)
- UoG vet students & graduates



Curriculum Evaluation

1

How do we **know** if our veterinary curriculum covers these competencies?

&

2

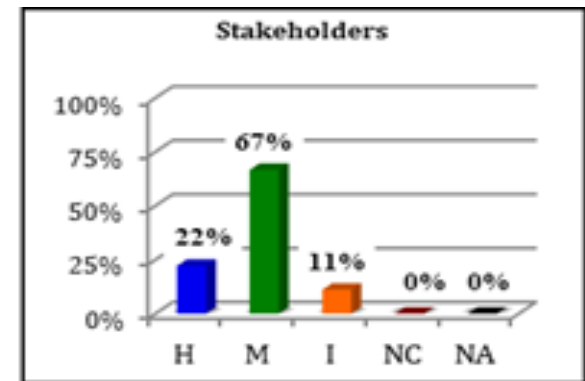
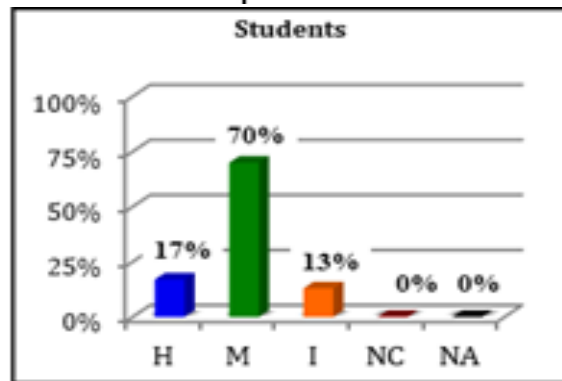
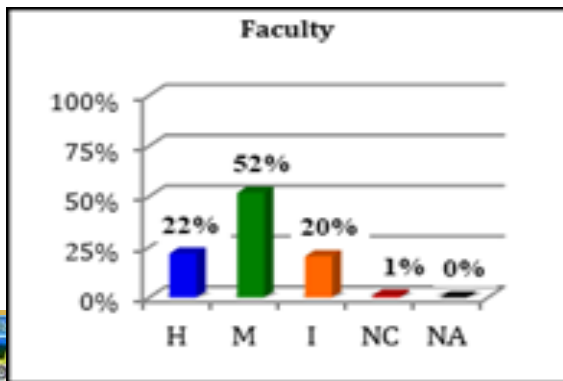
*How **proficient** are our graduating veterinarians in the OIE Day 1 competencies?*

Competency Evaluation Tool



Evaluation of OIE Day 1 Competencies Session 1: Epidemiology and Food Hygiene

Day 1 Competency: 2.1 Epidemiology							
a.) General Principles of Descriptive Epidemiology							
	Measuring Disease			Measuring Occurrence			
Is the average Day 1 DVM graduate able to:	Not in Curriculum	Highly Competent	Moderately Competent	Insufficiently Competent	Not Competent	Not Sure	Comments
Measure and describe disease? (i.e. calculate morbidity and mortality rates, attack rates, etc.)							
Calculate and describe disease occurrence? (i.e. incidence and prevalence)							
Describe the difference between the various temporal and spatial distributions of disease? (i.e. endemic, sporadic, and epidemic)							



Curriculum Evaluation...

1.2. Student Interview

- Senior vet medicine students
- Recent UoG DVM graduates

1. 3. Stakeholder Interview

- 20 current employers and supervisors of new UoG DVM graduates (livestock agency, regional labs, zone & districts)

1.4. Visit to UoG- CVMAS facilities

- Classrooms, labs, library, animal clinic



Day-1 OIE Competency Gaps Identified

Missing Day-1 OIE Competencies :

- General Certification Procedures
- Inspection & Certification Procedures
- International Trade Framework

Major missing contents

- Risk analysis
- Drug residues/withdrawal times
- Environmental health & biological waste management
- Outbreak investigation and management

Course misalignment - taught in a different sequence than proposed by OIE

- Animal Welfare
- Biostatistics
- English (Communications)



Curriculum Development

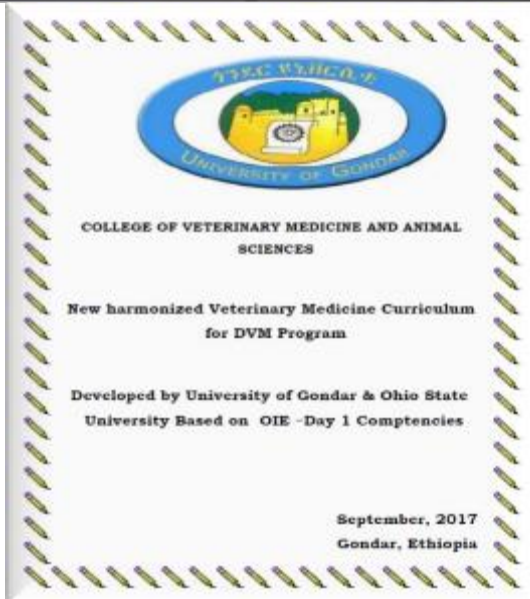
Gaps Identified	OIE Competencies	Content development
Missing OIE Competencies	General Certification Procedures	Incorporated into Vet Preventive Medicine, Clinical Practices (I-IV), Ethics & jurisprudence
	Inspection and Certification Procedures	Incorporated into Vet Public Health I & II
	International Trade Framework	Animal Health Economics
Major OIE Content Missing	Risk analysis	Veterinary Epidemiology
	Drug withdrawal times and drug residues testing	Pharmacology & Therapeutics I & II Drug residue testing into Vet Public Health II
	Environmental health and biological waste management	new course “One Health” and toxic waste management into Toxicology
	Outbreak investigation and management	Veterinary Epidemiology
Course misalignment)	Animal Welfare	Moved from 5 th year to 3 rd year
	Biostatistics	Moved from 5 th year to 2 nd year
	Communication skill	Incorporated across the DVM program



Curriculum Development ...



- 22% of courses (13 out of 60 courses) were modified
- 32 action items planned & used for implementation of the revised curriculum
- OIE harmonized UoG DVM curriculum implemented since 2017



Modified Courses in the new OIE Harmonized UoG Veterinary Curriculum

Veterinary Preventive Medicine **	Veterinary Ethics and Jurisprudence
Veterinary Public Health- I **	Animal Welfare and Behavior **
Veterinary Public Health – II **	Clinical Practices-I
Animal Health Economics	Clinical Practices-II
Veterinary Epidemiology **	Clinical Practices III
Pharmacology and Therapeutics – I	Clinical Practices- IV
Pharmacology and Therapeutics - II	

** Courses that have gone through significant redesign and update



Curriculum Implementation...

- Epidemiology
- Vet Preventive Medicine/disease management
- Vet Public Health
- One Health approach
- Animal Health Economics
- Clinical skill practices
- Communication skill
- **235 veterinary students (5 batch) attended the new curriculum**





Day 1
Platform for
Veterinary Education

Online Course Materials

- Developed in collaboration with **Ohio** and **Iowa State Universities** to meet veterinary education needs related to OIE Day-1 Competencies in Ethiopia.

Modules

1. Infectious disease epidemiology (poultry, swine, small & large ruminants)
2. Herd health and nutrition

Faculty Development

Certification - UoG Higher Diploma Program

- 80% of the college teaching staff certified on teaching methodology during project time (HDP)
- 2 UoG staff visited OSU teaching facilities (Labs, animal farms and hospitals), exposed to pedagogical practices, course material development, organizing teaching facilities



Dr. Tsegaw Fentle and Dr. Armando Hoet, UoG-OSU OIE Twinning Team Leader, discussing implementation of the different items as part of the Action Plan



Deans, Tsegaw Fenti, UoG-CVMAsc, and Rustin Moore, OSU-CVM, sharing experiences in regards to the Veterinary Curriculum
<http://www.uog.edu.et>



Student Exchange & Training



- 16 UoG vet students visited OSU
- Participated in Vet Preventive Medicine & Farm-to-Table (VPH) Rotations
- Exposed to advanced learning styles in OSU
- **Visited facilities;** diagnostic labs, animal hospitals, farms, processing plants in Ohio.
- Shared their experiences to peers in Ethiopia in seminars

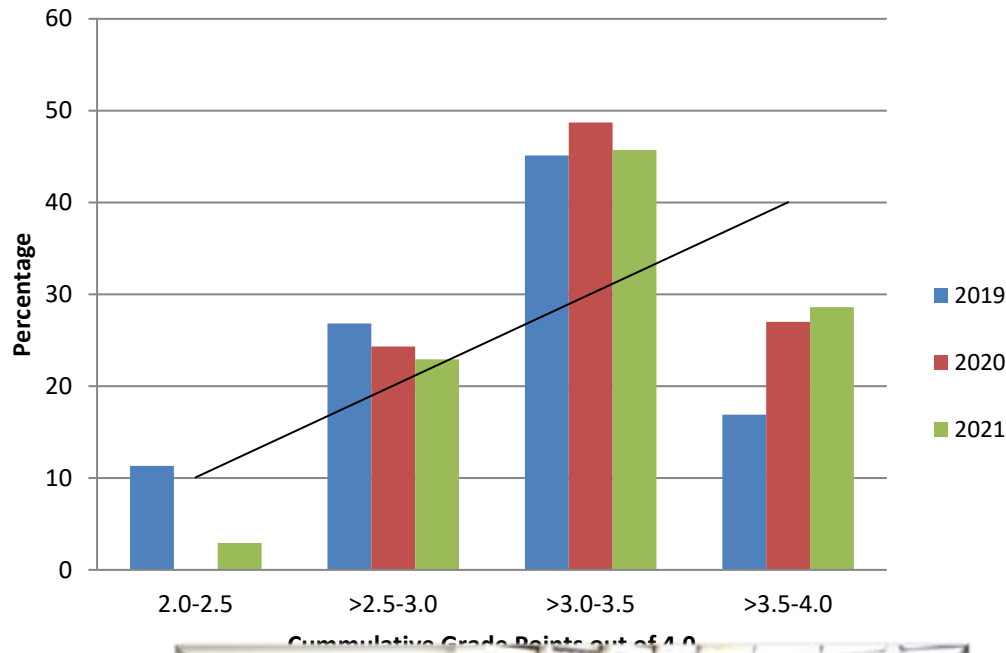


Interim Day-1 Competencies Evaluation of UoG DVM Graduates, May 2019

Competencies	Topics	Overall % Perceived H & M*
Zoonosis (2.3)	List and describe common and important zoonotic and foodborne pathogens.	100%
	List the most common routes of transmission for zoonotic and foodborne agents in animal population.	100%
	List important animal clinical signs associated with both zoonotic and foodborne disease.	91%
	Appropriately select a therapeutic tool to prevent and combat zoonotic and foodborne disease.	89%
TAD (2.2)	Describe the public health implications of TAD in their country	91%
	List the most common transmission pathway for TAD.	89%
	List and describe common and important TAD pathogens.	87%
Epidemiology (2.1)	Describe the difference between the various temporal and spatial distribution of disease.	89%
Animal Welfare (2.8)	Define animal welfare and describe the different elements or components.	89%
Food Hygiene (2.6)	Understand the role of veterinarians and other professionals in food safety.	82%



Academic Performance of Day 1 Vet Graduates



The proportion of DVM graduates scored CGPA >3.0 increased from 2019 to 2021.

These students learned some OIE competencies at advanced classes and some members were involved in student clubs and overseas trainings in OSU.



Experience Sharing

UoG-OSU VE Twinning experiences shared to:-

- To 12 Vet schools in Ethiopia & used as model for the national DVM curriculum in 2020.
- Published in Journal of Veterinary Medical Education (Vol 47 supplement, Sept 2020, AAVMC)
- Published in Ethiopian Vet Association bulletin, 2020
- Presented on the “**Asian Veterinary Statutory Body Network Virtual Workshop**”, Thailand, 2-9 December 2020.
- Presented on the **OIE Virtual Workshop for Veterinary Education Establishments in India** June 7-9, 2021.



Acknowledgements

- WOAH/OIE for supporting the UoG-OSU twinning project
- Bill & Melinda Gates foundation for funding the development of teaching materials
- The OSU and UoG Management
- Team members of the OSU-UoG twinning project
- ILRI and COHESA organizers and team members

