

International Livestock Research Institute

Training course report

Global Burden of Animal Diseases Ethiopia case study: Animal health economics

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Introduction

As part of Work Package 6 (capacity building) of the Global Burden of Animal Diseases (GBADs) Ethiopia case study, a training course on animal health economics was held on 28–30 June 2021 at the International Livestock Research Institute (ILRI) Addis Ababa campus to build the capacity of government stakeholders. The aim was to convey the basics of economics and its use in animal health decision-making to veterinarians, animal production experts, animal health decision-makers and epidemiologists. Stakeholder input was also sought on the direction of the project and to guide future trainings and project outputs.

Livestock are extremely important in Ethiopia for economic development and poverty reduction. Ethiopia has one of the largest livestock inventories in Africa, providing support for the livelihoods of an estimated 80% of rural poor. However, the economic benefit derived from the livestock sector is not commensurate with the economic potential and the sub-sector remains untapped. One of the major constraints is the wide range of livestock diseases prevalent in the country. Ethiopia is endemic to a number of livestock diseases causing a high degree of mortality and morbidity and posing significant economic, food security, livelihood and public health impacts.

During the project inception workshop held on 18 March 2021, key stakeholders noted that the country lacks a system to determine the economic burden of these diseases in the various sectors and farming systems (pastoral, agro-pastoral, mixed systems, smallholder farming and commercial farms). As a result, policymakers lack the required information to make informed decisions for investment in the livestock sector. Moreover, animal health practitioners often have difficulty in communicating the importance of their work in safeguarding livelihoods, food security, economic growth and public health.

The key to successful resource mobilization would be the incorporation of substantive economic evidence and the rationale for such investment. Government or private sector managers in the financial and planning realm need these to better understand the threats, and to provide the case for further and adequate investment in protecting animal health. Therefore, it has become increasingly important to provide sound economic justification for any proposed action to improve or safeguard animal health, to inform those expected to finance interventions. Such economic evaluations are used to assist in setting priorities and making resource allocation decisions when there are competing interventions and limited resources.

Objectives of the training

1. Provide basic introductory training on animal health economics to relevant staff in Ethiopia's central veterinary and livestock production services.
2. Improve awareness and competence in the use of animal health economics.
3. Familiarize participants and their organizations with future GBADs tools and approaches.

Course content

Trainers: Jonathan Rushton, Theo Knight-Jones, Wudu Temesgen, Kebede Amenu and Wondwosen Asfaw

Each session included a tutorial/lecture (1.5 hours) and a practical (1.5 hours). The training focused on basics with demonstrations of approaches to develop initial understanding.

Day 1

Introduction to animal health economics

- Definition and purposes of animal health economics
- Basic concepts of economics (scarcity, opportunity cost, rationality, marginal analysis, financial vs. economic analysis, short-term vs. long-term analysis, perspectives in economics analysis etc.)
- Major branches and approaches of economics
- The importance of economics to the resource allocation, planning and management of the animal health sector

Day 2

Impacts of animal diseases

- Economic impacts
 - Direct and indirect impacts
 - Ripple and spillover impacts
 - Externalities
- Public health impact
- Animal welfare impacts
- Intangible impact

Estimation of disease burden/loss

- Losses estimated as a function of the value of the animals
- Limitations of data needs and uncertainties related to the calculation of animal disease impact (livestock population size and structure, disease incidence and impact on production parameters, profitability of livestock production and trade, consumption of livestock products etc.)

Day 3

Understanding and using GBADs information

- What is GBADs?
- GBADs approach of economic burden estimation: the animal health loss envelope
- Animal health ontology
- Population and productivity estimation
- Disease burden attribution
- Familiarizing with GBADs knowledge engine
- Disease prioritization approaches in GBADs

Discussion

There was a discussion on the economic outputs/tools needed for Ethiopian veterinary services. None of the participants were involved in actual disease burden estimation or economic analysis of animal health. Animal health professionals from the Ministry of Agriculture mentioned that economic analyses or evaluations are done by hired consultants without much involvement of the professionals. According to the discussants, the practice of hiring external economists for economic evaluation made it difficult to understand the economic principles or to apply these approaches for decision-making on a regular basis. After the overall concept of GBADs was presented, the attendees were very keen to contribute to GBADs in terms of involvement in data sharing and use the outputs in future for decision-making in animal health.

Overall, the participants found the GBADs idea useful and were ready to collaborate. The participants also gave feedback on the prioritization theme presented in more detail. It was indicated that the Ministry of Agriculture of Ethiopia is using two disease prioritization schemes (Centers for Disease Control and Prevention [CDC] for zoonotic diseases and the World Organisation for Animal Health [OIE] for animal diseases). It was mentioned that the CDC method identified top zoonotic diseases for control and prevention. Though conclusive information was not clarified by the participants, it was mentioned that the OIE method of disease prioritization was developed and is being used. [Note: Given that published information regarding the use of OIE prioritization in Ethiopia is not available, a follow-up discussion is planned as part of the disease prioritization study of GBADs].

The participants reiterated the need to integrate economic principles in animal health management through educational capacity building of professionals and collaborative works especially involving actual research projects.

Suggestions from trainees for future courses

1. The trainees noted that the animal health economic training course was very timely. However, only three days were allotted for the training, which some thought was too short. The GBADs team emphasized that keeping government employees away from their jobs for more than three days on the training is difficult. In addition, it is more beneficial for the GBADs collaboration with the government to have several short training sessions over a year, for example, than one long one. However, training materials can be provided to trainees earlier so that they can prepare themselves.
2. Real data should be included so that trainees practise on actual information from the country. [Response: This will be incorporated into future trainings.]
3. Trainees requested that software be provided to assist in data analysis. [Response: In a short training course, this can be a challenge. However, basic training in Microsoft Excel should be possible.]
4. Trainees with backgrounds in animal production noted the need to include production data during training exercises.

Training evaluation

Instructions: Please tick your level of agreement with the statements listed below	Strongly agree	Agree	Disagree	Strongly disagree	Not relevant to this event
1. The objectives of the training were met	10	3			
2. The presenters were engaging	10	3			
3. The presentation materials were relevant	12	1			
4. The content of the course was organized and easy to follow	11	2			
5. The trainers were well prepared and able to answer any questions	12	1			
6. The course length was appropriate	7	4	2		
7. The pace of the course was appropriate to the content and attendees	8	5			
8. The exercises/role play were helpful and relevant	10	3			
9. The venue was appropriate for the event	11	2			

10. What was most useful?

- The approach how training was prepared. The training approach was very good and clear
- Every content of the courses given were useful especially estimating animal disease impact
- The relevance of the training, its content and delivery approach
- It was participatory
- The content of the course, its objective and appropriateness

11. What was least useful?

- All presentations were useful
- The Zoom training was not clear to understand
- The online training session was somehow difficult to catch all the points
- Some questions presented in the exercise are too vague and are not specific to the objective

12. What else would you like to see included in this event? Are there any other topics that you would like to be offered training courses in?

- Include breeding in the future (it is the base for livestock production)
- Detailed use and application of disease prioritization tools and data analysis
- Framework for estimating indirect cost in animal health
- The application of economics in animal health programs
- Economic analysis of animal diseases and their control
- Using real data and doing some practical exercises
- How to do economic analysis using software
- In addition to theoretical class lecture good to include field visit
- Introduction of risk and its model parameters
- Economic analysis and risk estimation associated with export–import of livestock and livestock products
- To provide the desired knowledge to trainees, good to include practical exercises on how to calculate real economic data

13. Would you recommend this course to colleagues? Yes/No and why

- Yes, I recommend
- Yes, they share experience, and they also gain more knowledge for their work
- It would be very important to capacitate veterinarians working both at federal and regional level, focusing on those working on data management and analysis. e.g. regional disease outbreak and vaccination reporting, peste des petits ruminants control focal persons
- Yes, very useful for decision-making and in their resource allocation in veterinary services and research
- Yes, especially for those with vet background so that they understand the economics of animal health
- Yes, to strengthen capacity on economic analysis along the livestock value chains and export–import

14. Any other comments?

- Engage experts from the Ministry of Agriculture on GBADs activities to help them get better understanding
- Thank you for providing us this opportunity, it will help us integrate economics aspect in our surveillance system
- It is a nice course, but more time is needed
- We need all the training materials in soft copy
- A good and attractive training
- If possible, it is good to give same training for other group of vets
- It is better to strengthen such collaboration in the future with government stakeholders in different areas
- Include losses due to introduction of pathogenic threats and losses due to condemnation of carcass during export
- I am very interested in this course. It is helpful especially in our country where scarce resource is allocated competitively between sectors

Training program

Time	Session	Responsible
Day 1		
0830–0900	Registration of participants	ILRI GBADs team
0900–0905	Introduction of participants	Participants
0909–0910	Training objective and program	ILRI GBADs team
0910–1030	Introduction to animal health economics <ul style="list-style-type: none"> ▪ Definition and purposes of animal health economics ▪ The importance of economics to the resource allocation, planning and management of the animal health sector 	Jonathan Rushton
1030–1100	Health break	ILRI GBADs team
1100–1230	Group work and discussions	Jonathan Rushton/ILRI staff
1230–1330	Lunch break	ILRI GBADs team
1330–1530	<ul style="list-style-type: none"> ▪ Basic concepts of economics ▪ Major branches and approaches of economics 	Wudu Temesgen
1530–1600	Health break	ILRI GBADs team
1600–1730	Group work and discussions	ILRI staff
Day 2		
0900–1030	Impacts of animal diseases	Wondwosen Asfaw
1030–1100	Health break	ILRI GBADs team
1100–1230	Group work and discussions	ILRI staff
1230–1330	Lunch break	ILRI GBADs team
1330–1530	Estimation of disease burden/loss <ul style="list-style-type: none"> ▪ Estimation of direct, indirect and zoonotic impacts of disease ▪ Limitations of data needs and uncertainties related to the calculation of animal disease impact 	Wudu Temesgen and Theo Knight-Jones
1530–1600	Health break	ILRI GBADs team
1600–1730	Group work and discussions	ILRI staff
Day 3		
0900–1030	Understanding and using GBADs <ul style="list-style-type: none"> ▪ General overview of GBADs and GBADs themes 	Theo Knight-Jones, Wudu Temesgen and Wondwosen Asfaw
1030–1100	Health break	ILRI GBADs team
1100–1230	Prioritization approaches in GBADs	Kebede Amenu
1230–1330	Lunch break	ILRI GBADs team
1330–1530	Discussion on what economic outputs/tools are needed for Ethiopian veterinary services	Participants
1530–1600	Health break	ILRI GBADs team
1600–1730	General discussion and wrap up	Participants

List of participants

Name	Designation	Institution
Dr Nabon Debela	Disease prevention and control expert	Disease Prevention and Control Directorate, Ministry of Agriculture
Mr Yimer Gobena	Vector and vector-borne disease expert and focal person for the national peste des petits ruminants eradication and control program	Disease Prevention and Control Directorate, Ministry of Agriculture
Dr Ermias Alemu	OIE national focal point for communication, and surveillance focal person for the national peste des petits ruminants eradication program	Epidemiology Directorate, Ministry of Agriculture
Dr Gashaw Beyene	Senior veterinary officer and OIE national focal point for disease notification	Epidemiology Directorate, Ministry of Agriculture
Dr Roba Jilo	Specialist veterinarian	Public Health Directorate, Ministry of Agriculture
Dr Asayegn Bekele	Senior quarantine expert	Quarantine Import–Export Inspection and Certification Directorate, Ministry of Agriculture
Mr Bayeta Senbeta	Associate researcher	National Animal Health Diagnostic and Investigation Centre
Mr Fekadu Merisha	Livestock and livestock products marketing expert	Livestock Marketing Directorate, Ministry of Trade and Industry
Ms Almaz Araya	Poultry production extension expert	Poultry Production Directorate, Ministry of Agriculture
Ms Mihret Frew	Dairy development expert	Dairy Production Directorate, Ministry of Agriculture
Mr Fekede Melaku		Meat, Hide and Skin Directorate, Ministry of Agriculture
Dr Megarsa Bedasa	Assistant professor	College of Veterinary Medicine and Agriculture, Addis Ababa University
Dr Berkisa Urge	National animal health research coordinator	Ethiopian Institute of Agricultural Research

Total number of participants: 13