



### FAO, Ethiopian Government collaborate to identify and map One Health key partners

Stakeholder mapping is key to successful One Health Programming as it facilitates cooperation to ensure successful outcomes. In view of this, the Food and Agriculture Organization of the United Nations (FAO) in Ethiopia, in collaboration with the Ministry of Agriculture (MoA); Ministry of Health; and Environment, Forest and Climate Change Commission, organized a workshop that aimed at identifying, characterizing and mapping relevant One Health key stakeholders in Ethiopia. The event was organized from 6 to 7 July 2018 in Bishoftu town and attended by 28 participants drawn from relevant governmental, private, academic and research, and international institutions.

The workshop identified, characterized and mapped 82 One Health key partners from government, non-governmental, private, community based organizations, and international institutions according to their potential



Workshop participants

One Health interest and policy influence. The partner organizations were grouped into four categories: Agriculture and allied institutions; Environment and allied institutions; Public health and allied institutions; and social development and allied institutions.

The entire mapping activity, including information on the listed stakeholders' network, policy influence and interest in One Health, was carried out with active participation of all the relevant partners.

The workshop was organized by Africa Sustainable Livestock 2050 (ASL2050) Project, a multi-year initiative funded by the U.S. Agency for International Development and technically supported by FAO.

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### New project to improve sanitary capacity, facilitate export of livestock and livestock products from Ethiopia

FAO Ethiopia, in collaboration with MoA, has started a project entitled, "Improving Sanitary Capacity and Facilitating Export of Livestock and Livestock Products from Ethiopia." This initiative is supported by the World Trade Organization (WTO), the Standards and Trade Development Facility (STDF). The project aims to build capacity of the competent authority to meet the Sanitary and Phytosanitary (SPS) requirements of potential and existing importing countries (mainly in the Middle East and North Africa) to overall facilitate export of sheep, goat and cattle meat and improve coordination and linkages among the various livestock and meat sector value chain actors. Budget of the three years project, which started in June 2018, totals USD 875 020.

The project was designed in consultation with key project stakeholders in the meat value chain in Ethiopia. The project's partners are MoA, National Animal Health Diagnostic and Investigation Center (NAHDIC), Veterinary Drug & Animal Feed Administration and Control Authority (VDFACA), Ethiopian Meat and Dairy Industry Development Institute, Ethiopia Meat Producers and Exporters Association Standards Authority, Ethiopian

Veterinary Association (EVA), Yabelo Regional Veterinary Laboratory in Oromia Regional State, Semera Regional Veterinary Laboratory in Afar Regional State and Jigjiga Regional Veterinary Laboratory in Somali Regional State.

According to the Ethiopian Meat and Dairy Industry Development Institute, Ethiopia has the potential to produce and export a total of about 500 000 MT of meat and earn about USD 1.8 billion annually. However, non-compliance with SPS standards and inadequate control mechanisms have been identified by the public and private sector as major issues affecting export capacity, market expansion and competitiveness in the sector.

Recently, the country has recognized livestock as a major growth driver for the economy and formulated a Livestock Master Plan (LMP) to guide the development of the sector. The LMP, which is export focused, has informed the second Growth and Transformation Plan of the sector spanning from 2015-2020. STDF is a global partnership and trust fund established by FAO, the World Bank, the World Health Organization, the World Organization for Animal Health (OIE) and WTO.

## Anthrax awareness raising workshop convenes

A half-day One Health Communication Network workshop with the theme “Prevention and Control of Anthrax in Ethiopia: Challenges & Opportunities!” was held at Beshale Hotel, Addis Ababa, on 23 August 2018. FAO Ethiopia and the National One Health Steering Committee (NOHSC) organized the workshop, in collaboration with the Government Communication Affairs Office (GCAO), and Johns Hopkins Center for Communication Program and through the generous support of the USAID.

The workshop was intended to share scientific information on anthrax prevention and control and thereby create public awareness on the disease and its prevention mechanisms; to provide update on the National Anthrax Control and Elimination Strategy development; to get support from development partners for implementation of the strategy; and to facilitate networking among One Health actors in Ethiopia. The National Anthrax Prevention and Control Strategic Plan; and general description and overviews of anthrax in Ethiopia were the two topics presented and discussed in the plenary. Additionally, a panel discussion was organized on efforts to date, future plans and areas of collaboration among different actors to synergize the concerted effort against the impact on anthrax.



Panelists of the Workshop

Forty delegates from Government Ministries, academic institutions, NGOs, and the media attended the workshop. The workshop was officially opened by Dr Sahlu Mulu, Advisor to the State Minister of Veterinary Service and Regulatory at the MoA. Dr Sahlu stressed, among others, on the need to disseminate One Health issues through different electronics, print and web based media outlets in order to sensitize a wide and diverse range of the public. Mr Kifle Worku, Advisor to the Government Communication Affairs Minister, on his part, reinforced same by saying, “We all partners have to be determined to raise public awareness on One Health diseases by disseminating relevant science based information in a timely manner.”

Finally, the workshop emphasized on the need to move fast in operationalizing the National Anthrax Prevention and Control/Elimination Strategy with special focus on activities at the grassroots; and by increasing involvement of higher educational institutions, which is critical for the successful implementation of the strategy. Focus on prevention of outbreaks with targeted and scheduled vaccination programs; and the role of the mass media in creating awareness among the public on the prevention and control mechanisms of anthrax were also among the major points capitalized by the workshop.

## National animal health workforce database has been reviewed, updated

Among the major outcomes of the 2011 evaluation by the OIE for the Performance of Veterinary Services in Ethiopia is the need to strengthen the national animal health workforce and maintain educational and professional quality and standards in order to improve the quality of veterinary services. In view of this, FAO collaborated with EVA, to review and update the database of the animal health workforce currently working in the public and private sectors; and non-governmental/partner organizations. The profiling consists of name, qualification and specialization, sex, age and working location of the professionals. On 16 August 2018, the findings of the animal health workforce database was presented, discussed and validated in the presence of relevant federal and regional institutions, the private sector and NGOs. In all, a database of 433 MSc and PhD; 2 238 DVM; 1 293 BVSc, BSc and BVL; 1 101 AHT; and 1 659 AHA animal health professionals have established. As a result, a complete database of 16 724 animal health professionals was documented with full profiling. Through the same collaboration, FAO and EVA have also developed four continuous professional development modules for three priority zoonotic diseases (rabies, anthrax and brucellosis) and Antimicrobial Resistance (AMR). This was followed by a refresher training for field based veterinary practitioners.

## Assessing capacity of national AMR surveillance system

FAO Headquarter and FAO Ethiopia jointly organized a mission to assess a national AMR surveillance system in Ethiopian animal health, public health and food laboratories using an Assessment Tool for Laboratories and Antimicrobial Surveillance Systems. The mission was funded through the Fleming Fund of United Kingdom and conducted from 30 July to 3 August 2018. The objectives of the assessment were to map and strengthen national AMR surveillance system; compile evidences for advocacy and action; monitor the outcomes of the interventions of

AMR containment; and improve linkages as One Health. The VDFACA in Addis Ababa; the NAHDIC in Sebeta; the Hirna Regional Animal Health Laboratory in Oromia Regional State; and the Kombolcha Regional Animal Health Laboratory in Amhara Regional State; were included in the capacity assessment. The assessing team consisted of seven members: three from FAO Headquarter, two from FAO Ethiopia and two from NAHDIC. Compiling the draft report of assessment is a work in progress.

## Sensitizing One Health stakeholders on socio-economic and livestock projections, scenario analyses

FAO ECTAD, through the ASL2050 project, funded by the USAID, and the MoA, jointly organized a stakeholder sensitization workshop on “Introduction to Foresight Techniques and Scenario Analyses” held from 27 to 28 August 2018 in Bishoftu town.

The workshop was intended to present and validate the long-term projections (2015 – 2050) of key socio-economic and livestock-related variables for Ethiopia developed by the FAO Global Perspectives Studies Team; and to introduce ASL2050 partners in the country to foresight techniques and livestock scenario analyses. Present at the workshop were, 18 experts from relevant government, non-



Partial view of the workshop

governmental, private, and international institutions.

The workshop employed scenario analyses methodologies involving presentations and hands-on practice using case studies.

Participants exercised analyses of plausible scenarios for Ethiopia and its cattle systems by 2050, including their potential impacts on the three societal dimensions, i.e., livelihoods, health and environment.

During the course of the event, a proposal and draft agenda for the next Livestock Scenario Formulation workshop were also presented and discussed.

## Building capacity of selected food, agriculture laboratories on AMR surveillance, antimicrobial susceptibility testing

ECTAD Ethiopia facilitated and coordinated participation of five laboratory experts at a regional laboratory and field training on integrated surveillance and testing of AMR in bacteria from humans, animals, food and the environment. Organized by FAO, the training event took place from 23 to 28 August 2018, at Kenya Medical Research Institute, in Nairobi. The trainees from Ethiopia were two laboratory experts from NAHDIC and one each from VDFACA, Bahir Dar University, and the Ethiopian Food, Medicine and Health Care Administration and Control Authority (EFMHACA).

The objective of the training was to build capacity of selected senior laboratory experts working actively in the microbiology and molecular laboratories (NAHDIC, VDFACA, EFMHACA and Bahir Dar University) with responsibility to conduct AMR testing. The event was also intended to build consensus towards development of harmonized laboratory protocols, standard operating procedures for the regionally identified pathogens and antimicrobials considered as priorities for the integrated AMR surveillance programs.

The training employed lecture and hands on training methods combined with field visits. The field visits were organized to an abattoir in Ruiru town, which is mainly known for demonstrations of sampling techniques on cattle (carcasses, lymph node, intestine samples) and environmental samples, and to a small-scale poultry farm for demonstration on how to take cloacal samples and poultry droppings.

In the end, the five participants from Ethiopia provided feedback about the training and its importance for their respective institutions. They agreed to organize training on AMR testing for regional, national and university laboratories; conduct assessment of regional veterinary laboratories capacity on AMR testing; develop strategic document for integrated AMR surveillance; and discuss on the surveillance strategy with stakeholders and donors. Additionally, trainings on upgrading laboratories diagnostic capacity on AMR, provision of supplies and beginning the surveillance on selected organisms with selected laboratories, analyzing and integrating the surveillance data were activities considered by the participants.

## Training on advanced laboratory diagnostic techniques for NAHDIC staff

From 23 July to 10 August 2018, FAO facilitated a training on advanced molecular and serologic diagnostic technique for two NAHDIC staff at the Hong Kong University, School of Public Health. Being part of the activities of ECTAD Ethiopia's MERS-CoV Surveillance in Dromedary Camels and other Domestic Animals in Ethiopia, the training was intended to fill the gap in building capacity of a virology laboratory testing at NAHDIC.

The training focused on Enzyme Linked Immuno-Sorbent Assay (ELISA) Test in Detecting MERS Corona Virus Antibody both for Camels and Human; Pseudo Particle Neutralization Test (PPNt) for MERS Corona Virus Detection; Real Time and Conventional Polymerase Chain Reaction (PCR) Techniques; and Phylogenetic Analysis of Sequenced Data by & Using Bio Edit and Mega Blast software.

## The Cattle Sector in Ethiopia - Summary

*Drafted by Tadele Mirkena<sup>1</sup>, Orsolya Mikecz<sup>2</sup> and Ugo Pica-Ciamarra<sup>2</sup>. July 2018*

### Introduction

Ethiopia's population is anticipated to grow from about 99 million in 2015 to almost 190 million in 2050 and the GDP per capita is expected to grow from less than USD 700 in 2015 to over USD 5 500 in 2050 (UNPF, 2017). The cattle sector is anticipated to undergo rapid growth and transformation in the coming decades, because of the implementation of the LMP and, more fundamentally, because of the anticipated population and economic growth, which will provide major incentives for increased production and productivity in the livestock sector.

### Cattle production systems in Ethiopia

The Ethiopian cattle sector widely affects society in both positive and negative ways. Cattle contributes about 45 percent to the agricultural GDP (Behnke & Metaferia, 2011). Farmers raise cattle, mostly dual-purpose beef and milk animals, in different production systems. Predominant production systems are: the mixed crop-livestock, pastoral/agro-pastoral, urban/peri-urban, commercial dairy and feedlots.

### Livelihoods

More than 12 million households, or 70 percent of the population in Ethiopia, keep cattle as source of income, food, draft power, insurance and savings, social capital and other goods and services (FAO, 2018). The vast majority of households that depend on cattle are in mixed-crop livestock systems, with cattle contributing over 30 percent to total household income. In the pastoral/agro-pastoral system, nearly 50 percent of household income comes from cattle production. A large share of households (41 to 95 percent depending on production system) use cattle dung and draft power, thereby further supporting their livelihoods (FAO, 2018). Also on average, 42 percent of the Ethiopian population consumes dairy products on a regular basis. Per-capita milk consumption is 576 grams per week (FAO, 2018).

### Cattle systems and the environment

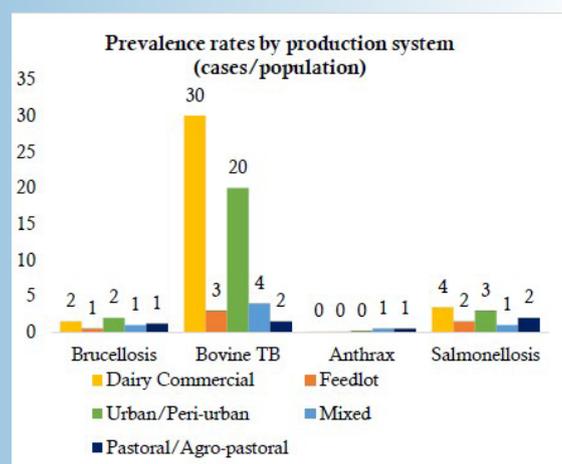
Livestock and the environment have a close and complex relationship. Livestock depends on the availability of water and feed, and generates solid, liquid and gaseous by-products. Improperly managed livestock production negatively impacts the environment through: overgrazing and improper land conversion resulting in grassland degradation; excessive application of manure leads to nutrient overloading of cropland; manure and waste water mismanagement leading to water pollution; water stress due to feed production, drinking, cleaning and processing; greenhouse gas emissions from enteric fermentation; airborne contaminants including gases, odour, dust, and microorganisms impairing air quality; and land use change and all of the above leading to biodiversity loss and reduced eco-system services.

### Animal and human health: the impact of zoonoses

Zoonotic diseases, which jump the animal-human species barrier, are a major threat for society as they can both affect entire sectors of the livestock industry and reduce human capital. Nearly 75 percent of all new, emerging, or re-emerging diseases affecting humans have zoonotic nature (FAO, 2013). Novel human-animal-ecosystem dynamics creates new public health threats. Emerging zoonotic diseases may have pandemic potential adding to existing food safety hazards. Besides, inappropriate use of antimicrobials leads to proliferation of antimicrobial resistant pathogens.

### Conclusions

The livestock sector in Ethiopia is transforming. However, its longer-term future, and of the cattle sector in particular, is still in the making and can be shaped by informed decisions taken today. To this end, the Government of Ethiopia not only is currently implementing policies to address current pressures and constraints, but has also joined forces with the ASL2050 Project to articulate alternative long-term (2050) livestock scenarios. This entails formulation of policies that support transformational pathways, which are sustainable from an environmental and livelihoods perspective and safeguard the health of humans and animals.



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## Story from Peste des Petits Ruminants (PPR) Project

### Vaccination against peste des petits ruminants central for sustaining livelihoods of communities

"I saved my life insurances thanks to the recent PPR vaccination given to my 7 sheep and 10 goats by the district veterinary services." These are the words of the pastoralist Ara Merry, 63 and a mother of eight children in Dasenech District of South Omo Zone.

In the past, Ara and her husband used to rear their livestock and shoats in a traditional way that their animals were regularly affected by Peste des Petits Ruminants (PPR) and other diseases. Even so, she was reluctant to use the government veterinary services. This has, therefore, cost her many shoats and affected her livelihood.

Ara started to understand the importance of government veterinary services when the district animal health officers, supported by the MoA and FAO via the European Commission-Supporting Horn of Africa Resilience Project (EC-SHARE PPR Project), convened her and other villagers and taught them about the PPR disease two years before. She remembers that the officers used posters and explained disease symptoms and prevention mechanisms by then.

The EC-SHARE PPR Project strives to reduce morbidity and mortality among the small ruminant population of Ara and other 1 539 pastoralist households in the Dasenech District of the Southern Nations, Nationalities and Peoples Region. It does so by conducting participatory disease surveillance, sample collection and forwarding as well as by undertaking targeted vaccination.

Ara now knows the measures she needs to take whenever she notices PPR symptoms on her and other villagers' sheep and goats because she closely works with the Community Animal Health Workers (CAHWs) in her neighborhood and with the district animal health officers. "The CAHWs and animal health officers visit and inspect my shoats on a regular basis and ensure that they are healthy," she asserts. In the past one year, the EC-SHARE PPR Project effectively vaccinated 179 845 small ruminants of Ara and other sheep and goat owners in the district. Following the vaccination, she has witnessed her shoats being free from PPR. Inspired by this, Ara now feeds her shoats very well. This effort of her is bearing fruit and that her shoats are providing more milk for her family. Their marketability is also improving.

It is evident that Ara has assumed additional responsibilities after the introduction of the PPR Project in her district. She takes her well-fed and healthy he-goats to the market and sells them for 1 000 ETB (US \$ 36.5) each and spends the money on family needs. She buys maize and barley for making the much-loved porridge for her family.

"I buy clothes and shoes for my school children," Ara adds. She has already taken a stand to send her children to school in order to better their future life. She is determined to do everything she can to support her children finish school and lead a better life.

For this to happen, Ara knows that she needs to raise her shoats in a modern way and that their health need to be ensured by working very closely with the government veterinary services. "I'm always very happy whenever I see my healthy sheep and goats in the barn," she exclaims.



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