



# report

## AFRICA SUSTAINABLE LIVESTOCK 2050

Technical Meeting and Regional Launch  
Addis Ababa, Ethiopia  
21–23 February 2017



## AFRICA SUSTAINABLE LIVESTOCK 2050

---

Technical Meeting and Regional Launch  
Addis Ababa, Ethiopia  
21–23 February 2017

### Recommended Citation

**FAO.** 2017. *Africa Sustainable Livestock 2050 – Technical Meeting and Regional Launch*, Addis Ababa, Ethiopia, 21–23 February 2017. FAO Animal Production and Health Report. No. 12. Rome, Italy.

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.

The views expressed in this information product are those of the author(s) and do not necessarily reflect the views or policies of FAO.

ISBN 978-92-5-109749-6

© FAO, 2017

FAO encourages the use, reproduction and dissemination of material in this information product. Except where otherwise indicated, material may be copied, downloaded and printed for private study, research and teaching purposes, or for use in non-commercial products or services, provided that appropriate acknowledgement of FAO as the source and copyright holder is given and that FAO's endorsement of users' views, products or services is not implied in any way.

All requests for translation and adaptation rights, and for resale and other commercial use rights should be made via [www.fao.org/contact-us/licence-request](http://www.fao.org/contact-us/licence-request) or addressed to [copyright@fao.org](mailto:copyright@fao.org).

FAO information products are available on the FAO website ([www.fao.org/publications](http://www.fao.org/publications)) and can be purchased through [publications-sales@fao.org](mailto:publications-sales@fao.org).

This publication has been printed using selected products and processes so as to ensure minimal environmental impact and to promote sustainable forest management.

---

# Contents

<i>Executive Summary</i>	<i>iv</i>
<b>INTRODUCTION</b>	<b>1</b>
<b>OBJECTIVES OF THE TECHNICAL MEETING AND REGIONAL LAUNCH</b>	<b>2</b>
<b>SESSION 1: ASL2050 IN CONTEXT</b>	<b>3</b>
The USAID’s Emerging Pandemic Threats Program	3
FAO and USAID Emerging Pandemic Threats Program	3
ASL2050: genesis, rationale and goals	4
<b>SESSION 2: ASL2050 – CAPACITY BUILDING FOR SUSTAINABLE LIVESTOCK</b>	<b>6</b>
Africa’s projected livestock growth trajectories	6
Asia’s past livestock growth trajectories	7
Africa Sustainable Livestock 2050: A forward looking, capacity building initiative	8
<b>SESSION 3: ASL2050 – A MULTI-DISCIPLINARY APPROACH</b>	<b>9</b>
Introduction: One Health and beyond	9
Emerging infectious diseases on the human-animal interface	9
An interactive One Health policy framework	10
<b>SESSION 4: WORKING GROUPS – ONE HEALTH INDICATORS</b>	<b>12</b>
<b>SESSION 5: LIVESTOCK DATA AND INFORMATION</b>	<b>14</b>
The Global Livestock Environmental Assessment Model	14
The Rural Livelihoods Information System	15
UBOS Livestock Data: Supporting evidence-based decisions in Uganda	16
<b>CONCLUSIONS</b>	<b>17</b>
ANNEX 1:	
<b>LIST OF PARTICIPANTS</b>	<b>18</b>
ANNEX 2:	
<b>PHOTOGRAPHS</b>	<b>22</b>
ANNEX 3:	
<b>INDICATORS FROM WORKING GROUPS</b>	<b>23</b>
ANNEX 4:	
<b>RECOMMENDATIONS</b>	<b>27</b>

---

# Executive Summary

The Food and Agriculture Organization of the United Nations (FAO) partnered with the United States Agency for International Development (USAID) and the Ethiopian Ministry for Livestock and Fishery to hold the first Africa Sustainable Livestock 2050 (ASL2050) Technical Consultation on the 21st and 23rd of February 2017 and the ASL2050 Regional Launch on the 23rd February 2017.

Representatives from Burkina Faso, Egypt, Ethiopia, Kenya, Nigeria and Uganda, as well as numerous partner organisations, attended the technical meeting to discuss the future impacts of livestock sector growth on Africa's environment, public health and livelihoods.

In the next 30–40 years, growing demand for meat, milk and eggs will drive significant growth in the African livestock sector. This presents substantial risks to the environment, public health and livelihoods, but also meaningful opportunities for economic growth. ASL2050 will help countries to make long term policy decisions to reduce the risks and maximise the benefits of changing dynamics in the livestock sector.

Consensus was reached in three key areas at the technical meeting, representatives agreed to:

- take a multi-sectoral, multi-stakeholder approach;
- establish a national steering committee comprising of a representative from each of the ministries in charge of public health, livestock, and the environment, and an FAO representative;
- launch ASL2050, and prepare a work plan within two months, in each participating country.

The consensus was formalised into a recommendations document that was presented and agreed upon at the regional launch, attended by ministers from participating countries.

---

# Introduction

The Food and Agriculture Organization of the United Nations (FAO) partnered with the United States Agency for International Development (USAID) and the Ethiopian Ministry for Livestock and Fishery to hold the first Africa Sustainable Livestock 2050 (ASL2050) Technical Consultation on the 21st and 22nd of February 2017 and the ASL2050 Regional Launch on the 23rd February 2017.

The meetings were attended by representatives of the six participating countries: Burkina Faso, Egypt, Ethiopia, Kenya, Nigeria and Uganda, as well as by representatives of the United States Centers for Disease Control and Prevention (CDC), the Intergovernmental Authority on Development (IGAD), the International Livestock Research Institute (ILRI), PREDICT-2, Preparedness and Response (P&R) and other national and regional institutions.

Funded by USAID, ASL2050 builds on the evidence that in the next 30–40 years the demand for animal source foods will grow rapidly in the African continent due to growth in human population, increasing consumer purchasing power and urbanization. As a response, producers and other value chain actors will make significant investments in livestock farming systems and value chains. The impact of these investments on people's livelihoods, public health and the environment will be significant, as the majority share of rural households depend on livestock for their livelihoods; approximately 75 percent of new emerging human infectious diseases are zoonotic; and livestock contribute about 14.5 percent to all human-induced greenhouse gas emissions. The future of African livestock will therefore influence the development trajectory of the African continent as whole.

Initially, ASL2050 is collaborating with Burkina Faso, Egypt, Ethiopia, Kenya, Nigeria and Uganda, which are anticipated to experience major changes in their livestock systems in the coming decades. ASL2050 will facilitate dialogue and consultation among national and regional stakeholders to:

- Collect quantitative and qualitative information on current and future livestock systems and their effects on public health, livelihoods and the environment;
- Interpret data and information to formulate future scenarios;
- Develop and agree upon strategic options for action that ensure the sustainable development of livestock for the next 30–40 years;
- Identify capacity gaps and needs for national and regional governments to ensure sustainable development of the livestock sector in the long-term.

With the objective of initiating a dialogue with the Ministries responsible for livestock, health and the environment on the joint implementation of ASL2050, FAO held the first ASL2050 Technical Consultation, on the 21st and 22nd February 2017, and launched ASL2050 on the 23rd February 2017, in the Capital Hotel, Addis Ababa, Ethiopia. This report summarises the presentations, discussions and the consensus reached at the meetings.

---

# Objectives of the Technical Meeting and Regional Launch

The technical meeting was organised in order to collaborate with partnering countries to reach a consensus on the implementation of ASL2050. The specific objectives were to:

- Present the rationale of ASL2050, including available long-term projections on changing livestock systems in Africa;
- Agree upon quantitative and qualitative sources of information to support the implementation of ASL2050;
- Agree upon the milestones and deliverables of ASL2050 at country level, regional level and global level;
- Agree upon modalities to implement ASL2050 at country level, in close collaboration with the ministries responsible for livestock, health and the environment;
- Identify opportunities for synergies and functional partnerships amongst national, regional and international institutions/organizations, including other USAID partners such as PREDICT-2 and P&R.

The regional launch was a high profile event attended by ministers from the ASL2050 target countries. The specific objectives were to:

- Present the rationale and officially launch ASL2050;
- Stress the importance of, and agree upon, a multi-stakeholder approach to assess the effects of livestock systems on three societal dimensions including public health, environment and livelihoods, and capacity building, to steer livestock on a sustainable development trajectory;
- Seek ministers' comments, advice and guidance on future steps to be taken.



---

## Session 1

# ASL2050 in context

### **THE USAID'S EMERGING PANDEMIC THREATS PROGRAM**

*Lindsay Parish, USAID*

The U.S. Agency for International Development (USAID) launched the Emerging Pandemic Threats (EPT-2) program in 2014 with the goal to minimize the impact of pandemic threats on human health, economic, and social stability. EPT-2 builds on the lessons and knowledge from EPT-1 and focuses on geographical locations and practices that facilitate the ability of zoonotic pathogens to spill over and spread to human populations. The Emerging Pandemic Threats program invests in One Health policies that encompass public health, agriculture, environment, economic growth, and education. In order to prevent and control emerging infectious disease threats, all of these sectors must be included in a multi-sectoral approach.

Approximately 75 percent of new emerging infectious diseases arise from animal reservoirs and are closely linked to places and activities with frequent human-animal interactions. As populations and incomes rise in Africa, we expect that the demand for livestock and animal source foods will greatly increase between now and 2050. Moreover, with an increased demand for animal sourced foods we would expect a higher frequency of interactions at the livestock/wildlife/human interface that give rise to environments which may facilitate disease spillover into human populations.

The Africa Sustainable Livestock 2050 (ASL2050) project aims to project the production and demand of livestock in Africa through 2050 and model the potential effects on public health, animal health, livelihoods, and the environment. ASL2050 works to maximize the positive economic and nutrition benefits of livestock intensification while minimizing the negative effects on public health, animal health, and the environment.

### **FAO AND USAID EMERGING PANDEMIC THREATS PROGRAM**

*Subhash Morzaria, FAO*

In attempting to fulfil its mandate, one of the major challenges that FAO faces is to feed adequately nearly 800 million people that go hungry every day, and about the same number of people that suffer from chronic malnutrition. Animal-derived foods such as meat, milk and eggs can be a rich source of high quality protein and micro-nutrients that can contribute to addressing the problem of hunger, malnutrition and health. However, it is estimated that between 25–30% of animal production losses occur due to chronic and epidemic livestock diseases. As many of the livestock diseases are zoonoses that infect people and directly affect their health, it is important that FAO works with partners to control diseases of livestock in order to support global efforts to improve food, nutrition and health security, particularly among the most vulnerable peoples of the world.

FAO's strategic approach to addressing emerging and re-emerging high impact zoonotic and non-zoonotic diseases (rEIDs) is to define the drivers of disease emergence, spill-over, spread and persistence in the existing farming systems, and invest in developing sustainable capacity at country level in early detection, rapid response, and prevention and control. Since the emergence and spread of H5N1 highly pathogenic avian influenza (HPAI) in Southeast Asia in 2004, FAO has had a strong and sustained partnership with USAID in helping affected and non-affected countries in Asia to control avian influenza, and in the process has helped countries in the region to build capacities that not only contribute to prevention and control of avian influenza but a number of other rEIDs. More recently, USAID through the Emerging Pandemic Threats (EPT) Programme has expanded its efforts in a number of countries in Africa and the Near East to support animal health projects of public health relevance (e.g. zoonoses, antimicrobial resistance). Under this partnership, FAO, under the umbrella of the EPT-2 Programme supports projects on:

- Health systems strengthening in 12 Global Health Security Agenda (GHTSA) Phase 1 countries in East and West and Central African countries,
- Epidemiology of Middle East Respiratory Syndrome - Corona Virus in four countries in the Horn of Africa and the Near East,
- Maintenance of an emergency stockpile to support rapid response to animal health emergencies of public health significance,
- Monitoring and evaluation to measure progress,
- ASL2050 project to better understand impacts (public health, environmental and livelihoods) of increased demand for animal sourced food in the future.

This diverse set of projects has a common objective, which is to ensure that the world is safe from high-impact epidemic and pandemic disease threats. This objective is also in line with the FAO's broader mandate of food, nutrition and health security, while alleviating poverty. FAO also recognizes that addressing infectious diseases requires bridging complex issues that include understanding value chains and markets, drivers of disease emergence and spread, nutrition and health, food security and safety, agro-ecosystems and land use policies, rural development, and poverty and livelihoods. Thus FAO will implement these projects fully embracing the One Health approach to ensure participation and consultation with a range of partners from public health, animal health, environment, policy, economics and social sectors.

## **ASL2050: GENESIS, RATIONALE AND GOALS**

*Ugo Pica-Ciamarra, FAO*

ASL2050 builds on three pieces of evidence that, taken together, suggest action should be taken now to ensure healthy livestock systems in Africa for the next 30 to 40 years. The first piece of evidence is that livestock systems not only are a major source of food for the population, but also have other effects on society: 75% of human diseases originate in animals; livestock contribute 14.5% to global greenhouse gas emissions; and over 50% of rural households partly or fully depend on livestock for their livelihoods. The second piece of evidence is that Africa is growing fast: it will contribute over 50% of the 2.4 billion human populations increase expected worldwide by 2050, with African citizens becoming increasingly well-off.

As a result, the continent will experience an unprecedented increase in the demand for livestock products, and associated fast changes in livestock systems in the next decades. The third piece of evidence is that fast changes in livestock systems can have negative impacts on society, as shown by Asia's past livestock growth trajectories (e.g. the avian influenza pandemic).

ASL2050 is a USAID funded initiative implemented by FAO whose aims are to:

- Anticipate and predict opportunities and challenges for society that will emerge in the years ahead due to fast-changing African livestock systems;
- Identify actions to be taken now for tapping into coming opportunities and dealing with the emerging challenges associated with growing and changing livestock systems.

## Session 2

# ASL2050 – Capacity building for sustainable livestock

### AFRICA'S PROJECTED LIVESTOCK GROWTH TRAJECTORIES

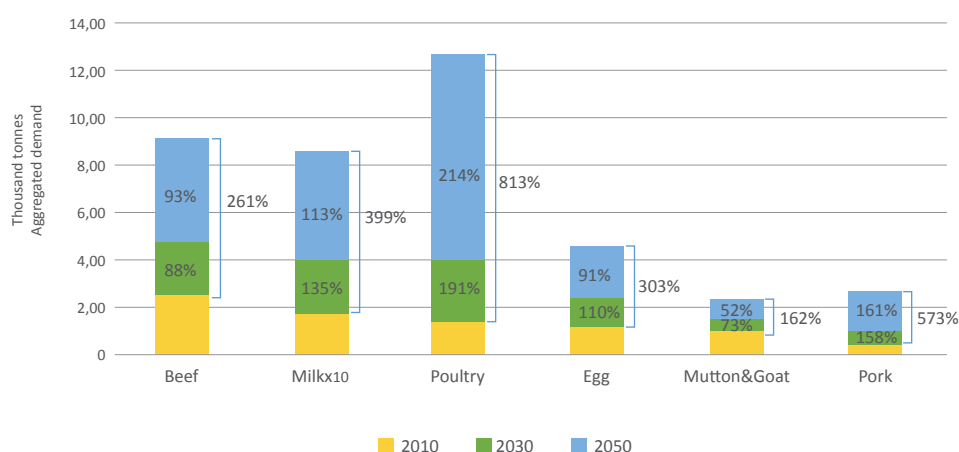
Ana Felis, FAO

Several drivers point towards a rising trend in the demand for livestock commodities in the African continent. The trends pushing up livestock demand are a large increase in population, which could double in some countries by 2050; the urbanization process; a significant increase in income (revealed by significant increases in expected GDP); and a changing diet, with a rising share of animal source proteins.

Projections for livestock demand and supply were presented. The projections for livestock demand by 2050 show a significant increase. In turn, the increase in demand is expected to push production. Nevertheless, the current projections consider that without further enhancement in productivity in the livestock sector in the region, production gaps might arise in future.

It is important to consider the unknown consequences that an increase in demand and production of livestock products could cause. The livestock production systems are expected to transform along the way, and the consequences might spread from development to public health, having an impact on employment, trade, or the environment. Productivity will have a major influence on the measures of livestock production and the associated impacts of livestock sector growth.

### Expected demand for livestock products



Source: FAO, Acosta and Felis (2016) estimations. Aggregated data for Burkina Faso, Egypt, Ethiopia, Kenya, Nigeria and Uganda

## **ASIA'S PAST LIVESTOCK GROWTH TRAJECTORIES**

*Joachim Otte, FAO*

In response to income increases and urbanization, Asian agriculture has shifted its main focus from the supply of cereals as staples to providing an increasingly protein-rich diet based on livestock and fisheries products. Initially, livestock sector growth was predominantly through expansion of livestock numbers while from the 1990s growth in livestock inventories was accompanied by significant structural transformation of the sector.

Structural transformation involved major changes in production technologies, scale and location of production as well as in sector 'governance'. Production units became larger, throughput was accelerated, units specialized on specific production steps, production moved from peripheral areas to the proximity of consumption centres, and family farms were increasingly controlled or replaced by agribusinesses. The latter successively expanded the scope of their operations to eventually cover all elements of the value chain from feed production to final retail of food products. Agribusinesses further increased market power through mergers and acquisitions beyond national borders and have become dominant players in many Asian countries.

Intensification and industrialization of a large share of food animal production has significantly increased the demand for animal feed leading to the conversion of large tracts of land to grow feed crops (mainly maize) while at the same time imports of maize and soybeans have soared. Large numbers of animals kept in enclosed systems at high densities are commonly provided in-feed antibiotics to enhance production and produce huge amounts of waste that exceed the absorption capacity of adjacent land. Rural areas have witnessed progressive marginalization of small-scale producers.

On the positive side, these developments have resulted in major increases in the availability and accessibility of meat, milk and eggs for a large number of, predominantly urban, consumers. The downside comprises nutrient overloads leading to eutrophication of surface water and contamination of ground drinking water, acceleration of the emergence of infectious diseases (e.g. the increased frequency of new reassortants of avian influenza virus), high levels of antimicrobial resistance and associated public health costs, and amplification of rural – urban inequality fostering migration from rural areas to cities.

The experience in Asia can assist in guiding African livestock sector development on a socially desirable and sustainable path, which will require active policy engagement to skillfully manage supply-demand pressures and social dimensions of development while safeguarding the environment. A key element for success will be proactive (rather than reactive) formulation of policies that comprehensively address the major hazards posed by potential livestock sector development trajectories. Formulation of such policies will require successive iterations of informed interdisciplinary multi-stakeholder processes.

## **AFRICA SUSTAINABLE LIVESTOCK 2050: A FORWARD LOOKING, CAPACITY BUILDING INITIATIVE**

*Ugo Pica-Ciamarra, FAO*

ASL2050 is a policy initiative. It collaborates with the governments of Burkina Faso, Egypt, Ethiopia, Kenya, Nigeria and Uganda for current policies and programmes to take into account the long-term effects of fast changing livestock systems on public health, livelihoods and the environment. This is a necessary condition for supporting healthy livestock systems in 2050. To achieve its goal, ASL2050:

- Adopts a multi-stakeholder multi-sectoral approach: it facilitates evidence-based dialogue and consultation among livestock stakeholders, including public and private actors; NGOs and the civil society; regional and international institutions and organizations; other USAID partners such as PREDICT-2 and P&R.
- Develops tools and methods that, by relying upon available data and information, will allow assessing the impact of existing livestock systems on public health, the environment and livelihoods.
- Develops and utilizes long-term projections to build alternative livestock systems scenarios for 2050, and assess their likely impact on public health, the environment and livelihoods.
- Identifies challenges and gaps to fill in the existing policy framework for ensuring sustainable livestock systems in 2050.

### **Points raised in discussion**

- Trade agreements such as the one with the European Union will have an important impact on livestock sector growth and we should factor in this and other potential trade agreements.
- Expansion of livestock production comes with the risk of land degradation. It is important to ensure livestock sector growth isn't at the detriment of wildlife and the tourism sector.
- The environmental impact of increasing outputs of animal and human waste due to population increases should be taken into account.

---

## Session 3

# ASL2050 – A multi-disciplinary approach

### **INTRODUCTION: ONE HEALTH AND BEYOND**

*Tabitha Kimani, FAO ECTAD, Kenya*

One Health represents a holistic vision to address complex challenges that threaten human and animal health, food security poverty and the environments where diseases flourish. These problems threaten global health and economic well-being, including international trade. Many of the dangers stem from diseases circulating in animals, transmitted by food or carried by vectors.

Disease risks are multiplying exponentially due to global trends: booming trade, increased demand for meat and animal products – such as milk and eggs – from emerging economies, the urgent need to produce more food for a growing population, and intensification of farming to ramp up that production. Yet unregulated expansion of livestock farming encroaches on pristine habitats, pushing domestic animals, humans and wildlife into closer and more frequent contact. Crowded, unhealthy conditions create the same tinderbox for disease in animals as they do in humans: HIV, severe acute respiratory syndrome (SARS), H5N1 highly pathogenic influenza and pandemic H1N1 influenza that emerged in 2009 are recent examples.

FAO's objective is to achieve food security and health security by strengthening veterinary and animal production systems so they can better monitor disease threats and care for the health of livestock and the environments they are raised in.

### **EMERGING INFECTIOUS DISEASES ON THE HUMAN-ANIMAL INTERFACE**

*Carlos Zambrana-Torrel, PREDICT-2*

The explosive expansion of land conversion, global travel, and human populations over the past century has led to a rise in pandemic risk, accompanied by exponential growth in the economic impacts of emerging threats. For example, the 2004 outbreak in East Asia resulted in economic losses of USD 20 billion over the following five years. The majority (~60%) of the emerging infectious diseases (EIDs) recorded since 1940 were caused by zoonotic (animal) pathogens, with most of these (>70%) caused by pathogens with a wildlife origin. EID events caused by wildlife pathogens are increasing in impact and through time – more than half of the most recent EIDs (1990–2000) had a wildlife origin. EIDs are mostly driven by environmental changes – including human population pressures, land use change and agricultural intensification. These drivers, however, have different impacts across the world. For example, poultry might contribute more to the emergence of infectious disease in Southeast Asia than in Africa.

**PREDICT-2**, in close collaboration with FAO and Preparedness and Response, is looking how the disease emergence landscape in Africa can potentially change with the increase of agricultural intensification in particular livestock. We are using statistical modelling to generate risk maps of EIDs tailored to Africa and projected to 2050 under different scenarios of livestock intensification. In addition, we are simulating the outbreaks of two diseases in Africa: Avian Influenza and Middle East Respiratory Syndrome (MERS). We are examining how changes in farming systems with intensification can change the risks of disease outbreak, and how policies, such as biosecurity, bio-surveillance and response, can mitigate these changes and reduce the risk of outbreak. The results of this project will help to delineate adequate policies to reduce the human and economic burden of potential emerging infectious diseases in the face of livestock intensification.

This presentation was preceded by a video from Peter Daszak, the president of EcoHealth Alliance. The video, entitled *The Ecology of Emerging Zoonoses*, can be found here: <https://youtu.be/TJZ39tLjJQM>

## **AN INTERACTIVE ONE HEALTH POLICY FRAMEWORK**

*Scott Moreland, P&R Project/Palladium*

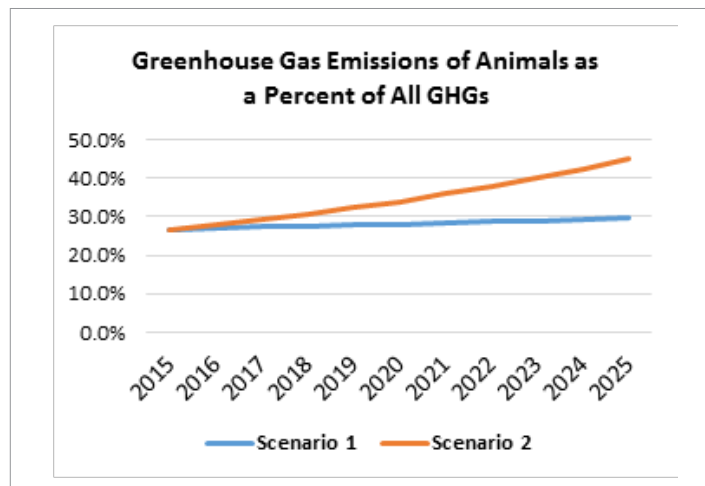
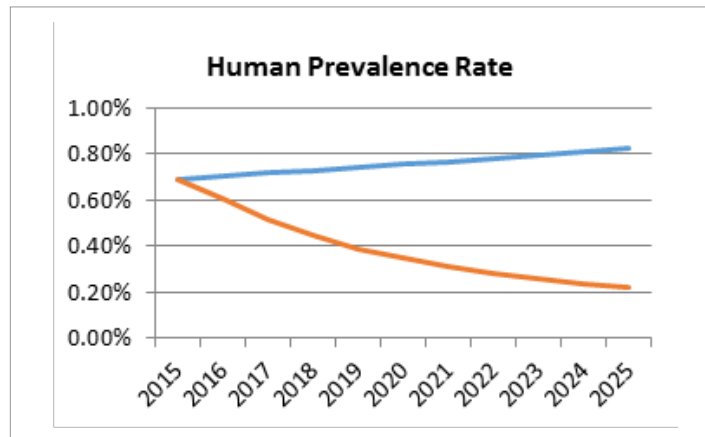
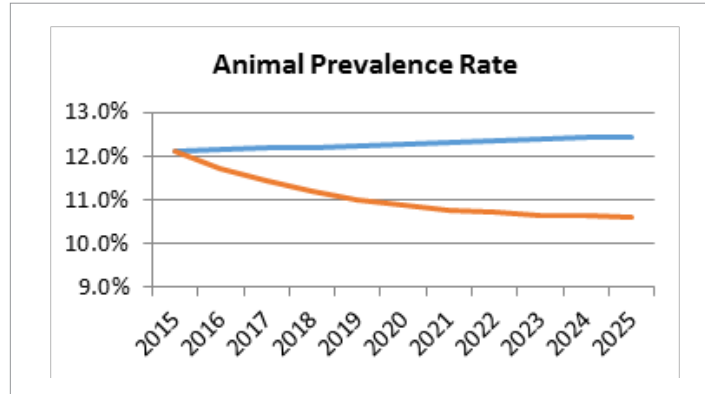
Africa is expected to become one of the fastest growing economic regions in the world in the next three decades. As incomes grow, the demand for livestock and livestock products also will increase. These developments, combined with continued fast population growth, are likely to spur dramatic intensification and expansion of livestock production.

Livestock and livestock products are important engines of economic growth and food and nutrition security. But rapid growth also poses economic and health risks from diseases among animals and people, antimicrobial resistance, and environmental degradation.

Africa must be better prepared so as to avoid the disastrous scenario that Asia experienced with avian influenza. We developed a One Health Policy model to generate data for policy dialogue and decision-making to mitigate risks from livestock intensification on human, animal, and environmental health. The model uses Excel and can be populated with country-specific data. Much of these data are publicly available. The model's framework makes explicit the connections among human and animal population growth, zoonotic disease, public health outcomes, livelihoods, and environmental impacts such as water use and greenhouse gas emissions by animals. It accounts for opportunities to mitigate risk through program and policy interventions. Users can program specific interventions into the model as data permit. The specific interventions to include may be selected based on effectiveness research and expert counsel.

The model is being piloted under the USAID-funded Preparedness and Response (P&R) project, in Ethiopia in cooperation with the Ministry of Livestock and Fisheries, the Ministry of Public Health and FAO with a focus on brucellosis in cattle. It is planned to apply the model to the six participating countries of ASL2050.





---

## Session 4

# Working groups – One Health indicators

One of ASL2050's objectives is to facilitate stakeholder dialogue and consultation for countries to generate actionable livestock-related quantitative and qualitative indicators. Since a multitude of indicators can be generated to quantify livestock systems and their impact on society, the ASL2050 project will be called to find a common approach for determining impact indicators among countries and this will necessarily involve the selection of the most relevant livestock-related indicators for each impact type.

The working group exercise intended to actively engage ASL 2050 participants into this selection process and to take advantage of their contribution and feedback for forthcoming project activities. With this final aim, the participants were divided into four working groups, associated with 4 thematic domains:

- WG1: The effects of animal diseases on livestock systems;
- WG2: The effects of livestock systems on public health;
- WG3: The effects of livestock systems on the environment;
- WG4: The effects of livestock systems on livelihoods.

In order to stimulate the discussion on the results obtained, each working group was further split into two tables (e.g. WG 1 had WG 1A & WG 1B) and each table was composed of participants from different backgrounds and representing different countries.

The participants were engaged in operational activities and tasks – with a time-constrained schedule – also with the objective of sharing with them the complexity of future activities to be undertaken during the ASL2050 Project. In order to facilitate the discussion within the Working Groups, we provided a list of relevant indicators as identified by the international community in the context of the Global Health Security Agenda and as targets in the UN 2030 Agenda for Sustainable Development.

Working Groups activities concerned:

1. Discussion of indicators to be taken into account for the evaluation of livestock-related impacts in different domains.
2. Selection of 5 top-priority livestock-related indicators, able to synthetically express livestock-related impacts within each domain.
3. Collegial discussion on the 5 selected top-priority indicators.

The results of the exercise show that:

- Several perspectives shall be taken into account when determining and selecting impact indicators since people with different background tend to analyse the same phenomena from different angles.
- In some occasions, the two tables belonging to the same working group came up with very different selections of indicators (indicators selected by each table are shown in Annex 2).
- The selection of indicators generally took advantage of the indicators provided by the UN 2030 Agenda for Sustainable Development, but the suggestion derived from the brainstorming was to look not just on those.
- Stakeholders are expecting the ASL 2050 Project to take into account a broad variety of quantitative and qualitative livestock-related indicators.

---

## Session 5

# Livestock data and information

### THE GLOBAL LIVESTOCK ENVIRONMENTAL ASSESSMENT MODEL

*Anne Mottet, FAO*

Policy makers need evidence and scenarios to guide the development of the livestock sector but data can be scarce. In addition, livestock is complex: multiple species, strong links with land use and crops, mobility, extensive/intensive, diverse production cycles, and a wide range of management systems. The sustainable development of the sector however, requires interventions in the area of feed quality, grazing management, animal health, herd management, housing, and manure management. To run scenarios of interventions to improve sustainability in the livestock sector, we need to fill the gaps in existing data using biophysical models.

GLEAM is a modelling framework that simulates the interaction of activities and processes involved in livestock production and the environment. The model is developed to assess livestock production and its interactions with the environment at (sub)national, regional and global scale.

GLEAM differentiates key stages along livestock supply chains such as feed production, processing and transport; herd dynamics, animal feeding and manure management; and animal products processing and transport. The model captures the specific impacts of each stage, offering a comprehensive and disaggregated picture of livestock production, its use of natural resources (land, feed, nitrogen) and the greenhouse gas emissions associated with each stage of production. GLEAM provides evidence and valuable information to policy makers and other sector's stakeholders to plan for intervention in livestock.

A spatially explicit model, GLEAM runs in a GIS environment and relies on a large number of inputs and databases, such as the Gridded Livestock of the World 2.0 (Robinson et al., 2015), the GAEZ: Global Agro-Ecological Zones (FAO, International Institute for Applied Systems Analysis), herd parameters (fertility, mortality, yields etc.), manure management and feed rations at different resolutions. The resolution of GLEAM is about 10 sq km.

GLEAM's outputs can be generated at various scales and levels of aggregation: global, regional, national and sub-national, by species or production systems or by animal cohorts. They include production of meat, milk and eggs, feed intake by type of feed, nitrogen and phosphorus use, land use and greenhouse gas emissions.

GLEAM includes the spatial heterogeneity of key drivers such as livestock distributions, feed rations and productions systems. It can also include point specific drivers such as disease outbreaks. The uncertainty of GLEAM is related to the input data, which are systematically reviewed and corrected when working at country level.

An interactive and simplified version of the model called GLEAM-i was developed to bring the functionalities to a wide range of users. GLEAM-i is the first open, user-friendly and livestock specific tool designed to support governments,

project planners, producers and civil society organizations to calculate greenhouse gas emissions (GHG) from livestock using IPCC (2006) Tier 2 methods. GLEAM-i can be used in the preparation of national GHG inventories and in ex-ante project evaluation for the assessment of intervention scenarios in animal husbandry, feed and manure management. The tool was developed as an Excel file where users can change baseline default parameters such as fertility rates, mortality rates, milk yields, growth rates, feed rations and manure management systems and explore scenarios and their impacts on production and greenhouse gas emissions.

The latest version as well as the supporting model description and user guide are available for download <http://www.fao.org/gleam/resources/en/>

## **THE RURAL LIVELIHOODS INFORMATION SYSTEM**

*Orsolya Mikecz, FAO*

The key message of the presentation is that there is plenty of data to discover the role of livestock activities in rural livelihoods, which can be linked to other data used by the ASL2050 Project, such as the Gridded Livestock of the World (GLW). The Rural Livelihoods Information System (RuLIS) is a joint project of FAO, the World Bank and the International Fund for Agricultural Development (IFAD) using nationally representative multi-topic household surveys to provide indicators describing the living standards of the population. These surveys are done by the national statistical offices or the governments, often in collaboration with the World Bank. This is an ongoing project, the online platform providing 160 indicators, for provisionally 50 surveys (~45 countries), will become public by the end of this year. The team working on RuLIS is the focal point for SDG Target 2.3 aiming for improvement in productivity and incomes of small-scale food producers, therefore there are a lot of indicators focusing on this topic. All indicators are available disaggregated by rural/urban area, household composition, income quintiles, farm size and share of agricultural income in total income. The project uses a lot of panel datasets: the same households are revisited in different years, giving a good understanding of the dynamics of certain indicators.

The presentation illustrates examples of the information coming from such surveys, using the Ethiopia Socioeconomic Survey 2013–2014, the Nigeria General Household Survey Panel 2012–2013 and the Uganda National Panel Survey 2009–2010 as an example. In these surveys, we can typically:

- Identify livestock keeping households
- Have information on the livestock population owned by the household (and on stock variation in the last 12 months)
- Have information on medical services and vaccination
- Identify households who have experienced shocks related to livestock diseases, and have information on the effects of these shocks
- Get a detailed picture of household food consumption: the share of animal source foods, the source of the food items (purchase/own production/received as gift)
- Understand the role of income from livestock activities in total household income

- Have information on public health: distance from health clinic/doctor/pharmacy, vaccinations, height/weight measurement of children, sickness/injuries in a reference period, bednet usage etc.

This information can be linked to georeferenced data, and be integrated into the ASL2050 and country data pool. Currently we've been linking the RuLIS data with the GLW, some examples are shown on the mapped data. Our objective for this year is to integrate this data with other sources, and to work together with the countries in validating the data.

## **UBOS LIVESTOCK DATA: SUPPORTING EVIDENCE-BASED DECISIONS IN UGANDA**

*Patrick Okello, Uganda Bureau of Statistics (UBOS)*

The Uganda Bureau of Statistics (UBOS) is a semi-autonomous body established by an Act of Parliament (1998) to promote the production of reliable official statistics and ensure the development and maintenance of the National Statistical System (NSS). UBOS' Core Business is the production, coordination and dissemination of official socioeconomic statistics to inform the decision making processes and monitor the impact of government initiatives, policies and programs. UBOS collects livestock-related data mainly through censuses and surveys. The former, such as the Agricultural Census, are undertaken every ten years: they collect few information but from the entire, or the largest part of the Ugandan population. The latter, such as the Household Budget Survey, collect detailed information but only from a sample of the population, say 5 000 households. UBOS livestock-related data included information on herd size; herd composition; production and husbandry practices; access to animal health services; production and productivity parameters; etc. UBOS does not make detailed analyses of the livestock data it collects, as this is beyond its mandate. It only generates basic statistics on livestock, which are included in the Statistical Report it regularly produces. Upon request, however, UBOS provide detailed livestock datasets to stakeholders and also assist them in data analyses. The Smallholder Livestock Report produced by the Uganda Ministry of Agriculture, Animal Industry and Fisheries is a remarkable example of how stakeholders can tap into available UBOS livestock-related information.

### **Points raised in discussion**

- Livestock production is complex and many of the factors were covered in the presentations, climate change, trade, livelihoods, public health etc., but the cultural factors influencing livestock production have not been accounted for. Cultural factors such as social status, dowries, and emotional attachment to livestock can have major impacts on livestock production policy implementation.
- Concerns were raised about the reliability of some data sources.

---

# Conclusions

The consensus reached at the technical meeting was summarised in a presentation by Ugo Pica-Ciamarra which outlined the major outputs of ASL2050:

1. Description of current livestock systems and their impact on society
2. Description of future (2050) livestock systems and their likely impact on society
3. Policy recommendations, i.e. identification of challenges, policy gaps/options to ensure healthy livestock systems in the long term
4. Toolkit/Guidelines for assessing the impact of current and future livestock systems on society

## **The workplan methodology:**

1. Prioritize livestock systems
2. Assemble, analyse and process available datasets
3. Engage stakeholders to fill gaps and validate findings
4. Review policies to identify gaps and make recommendations

## **The boundaries of the programme:**

1. It is a policy initiative. There will not be any activities on the ground (e.g. no surveillance or vaccination)
2. Not a measure of sustainability, it is about understanding impact
3. 75% of resources used at country level, in about 2 years

## **The institutional arrangements:**

1. Each participating country will have a steering committee with representatives from FAO and the Ministries of Health, Environment and Livestock to guide the implementation of ASL2050 in their country, with the possibility for representatives from other ministries or organizations to be added to the core members as required.
2. FAO headquarters and regional offices, and P&R and PREDICT-2 will provide support to country level staff for modelling impact, facilitating cross-country learning, establishing and maintaining linkages with international and regional partners, and ensuring consistency of country activities.
3. Country level ASL2050 staff will generate outputs in collaboration with national governments and FAO staff at all levels.
4. The consensus reached at the technical meeting was formalised in a recommendations document that was presented and agreed upon at the Regional Launch, attended by ministers from participating countries. The recommendations document can be found in Annex 3.

---

## Annex 1

# List of participants

Name of invited person	Organization	Country
Abebe Wossen	USAID EPT-2 Preparedness and Response Project	Ethiopia
Alabi OLANIRAN	Agriculture and Rural Development	Nigeria
Albin Sang	Ministry of Agriculture Livestock and Fisheries (Department of Veterinary Services)	Kenya
Alessandra Falcucci	FAO HQ	Italy
Alethia Cameron	FAOSFE	Ethiopia
FAOSFE	Ethiopia	
Allison White	EcoHealth Alliance	USA
Amira Abdelnabi	FAO ECTAD North Africa	Egypt
Ana Felis	FAO HQ	Italy
Anne Mottet	FAO HQ	Italy
Antonio Mele	FAO HQ	Italy
Azage Tegegne	ILRI	Ethiopia
Berhanu Bedane	FAO RAF	Ghana
Bewket Siraw Adgeh	Ag knowledge, learning, documentation & policy project	Ethiopia
Bisesi Michael	The OHIO State University/ GOHI	USA
Brendah Sikolo	Ministry of Health	Kenya
Carlos Zambrana	EcoHealth Alliance	USA
Carolyn Nasimiyu	Ministry of Health	Kenya
Charles Bebay	ECTAD West Africa	Ghana
Christopher H.O. Wang	Ministry of Agriculture Livestock and Fisheries (Department of Veterinary Services)	Kenya
Columba Teru VAKURU	Agriculture and Rural Development	Nigeria
Dademanao PissangTchangai	FAO Burkina Faso	Burkina Faso
Dara Carr	P&R/Palladium	USA
Elias Walelign	National MERS-CoV Project Coordinator	Ethiopia
Eman Hana Nasif Hana	Ministry of Health	Egypt
Fadiga Mohamadou	FAO Senegal	Senegal
Folorunso Fasina	FAO	Kenya
Fredrick Kivaria	FAO Uganda	Uganda

(cont.)



Name of invited person	Organization	Country
Getachew Ahmed Abegaz	IFPRI	Ethiopia
Getachew Gari	National Laboratory Expert	Ethiopia
Getachew Abebe	FAO Ethiopia	Ethiopia
Getnet Yimer Ali	Global One Health Initiative Eastern Africa regional Director	Ethiopia
Grace Kimaru	Ministry of Agriculture Livestock and Fisheries (Department of Veterinary Services)	Kenya
H. E Anna Rose Ademun	Ministry of Agriculture, Animal Industry & Fisheries	Uganda
H.E Akpaka Kalu	WHO Ethiopia	Ethiopia
H.E Eyasu Abreham	Ministry of Agriculture & Natural Resources	Ethiopia
Haftom Taame	Africa CDC	Ethiopia
Hassen Ali	FAO Ethiopia	Ethiopia
Hon. Joy Kbatsi	Minister of State for Animal Industry	Uganda
Joachim Otte	FAO HQ	Italy
John Edgar	USAID (Ethiopia)	Ethiopia
John Toyin TAIWO	Agriculture and Rural Development	Nigeria
Joseph YOUMA	Ministère de l'Environnement, de l'Economie Verte et du Changement Climatique	Burkina Faso
Kenneth Mugabi	Minister of State for Animal Industry	Uganda
Lemma Gizachew	FAO Ethiopia	Ethiopia
Leslie Reed	USAID Ethiopia	Ethiopia
Lindsay Parish	USAID	USA
Lotfi Allal	FAO ECTAD North Africa	Egypt
Matthew Burnett	FAO HQ	Italy
Meysa Hamza Abdoulhamid Mahmoud	Ministry of Health	Egypt
Michael Francom	USDA (Ethiopia)	Ethiopia
Mohamed Fekry	Ministry of agriculture and Land Reclamation	Egypt
Mohammed AwDahir	FAO SFE	Ethiopia
Nega Tewolde	National Epidemiologist	Ethiopia
Orsolya Mikecz	FAO HQ	Italy
Patrick Okello	Bureau of Statistics	Uganda
Pindé Souleymane	Ministère des Ressources Animales et Halieutiques	Burkina Faso
Savadogo Joseph	Ministère des Ressources Animales et Halieutiques	Burkina Faso

(cont.)

Name of invited person	Organization	Country
Sawadogo Issa	Ministère des Ressources Animales et Halieutiques	Burkina Faso
Scott Moreland	Palladium Group	USA
Scott Newman	FAO Ethiopia	Ethiopia
Senbeto Funte	ACDI/VOCA	Ethiopia
Siboniso Moyo	ILRI	Ethiopia
Silvia Alonso	ILRI	Spain
Solomon Muchina Munyua	IGAD Centre for Pastoral Areas and Livestock Development (ICPALD)	Kenya
Stephen Manegene	Ministry of Environment & Natural Resources	Kenya
Stephen Morin	USAID Ethiopia	Ethiopia
Subhash Morzaria	FAO HQ	Italy
Susan Mugwe	ECTAD EA	Kenya
Sylvia Murphy	Centers for Disease Control Ethiopia/CDC	Ethiopia
Tabitha Kimani	ECTAD EA	Kenya
Tadele Mirkena	FAO Ethiopia	Ethiopia
Tarek Seleem	Ministry of agriculture and Land Reclamation	Egypt
Thomas Cherenet	Ministry of Livestock & Fisheries	Ethiopia
Tim Robinson	ILRI	Kenya
Traore Issouf	Ministère de la Santé	Burkina Faso
Ugo PicaCiamarra	FAO HQ	Italy
Wondossen Asfaw	Ethiopian Veterinary Association	Ethiopia
Wondwossen Gebreys	Director of Global Health Programs	USA
Yilma Makonnen	FAO ECTAD East Africa	Kenya
Yirgalem Gebremeskel	USAID (Ethiopia)	Ethiopia
Yohannes Girma	Ethiopian Agricultural Transformation Agency	Ethiopia
Yung-Ting Bonnenfant	USAID (Ethiopia)	Ethiopia
Jack Mortenson	USAID	Ethiopia
Zelalem Tadesse	FAO Tanzania	Tanzania
Yoseph Mekasha	ATA	Ethiopia
Emmanuel Musa	WHO Ethiopia	Ethiopia
Lisa Kramer	USAID	USA
Ameha Sebsibe	IGAD/ICPALD	Kenya
Fessehe Tekele	Ethiopian Ministry of Health	Ethiopia
Mohammed Abdulaziz	Africa CDC	Ethiopia

(cont.)

---

<b>Name of invited person</b>	<b>Organization</b>	<b>Country</b>
Zerihun Gashaw	BoA	Ethiopia
Herilinda Temba	Africa CDC	Ethiopia
Guy Gerard Kouame	Africa CDC	Cote d'Ivoire
Kebba Omar Taitech	WHO Ethiopia	Ethiopia
Afewerk GebreEyesus	FAO Ethiopia	Ethiopia
Sara Mesfin	-	Ethiopia
Lemlem Mengistu	EPA	Ethiopia
Gashaw Debela	MoLF	Ethiopia
Silabat Manaye	FBC	Ethiopia
Anwar Mohammed	MoLF	Ethiopia
Shetunen Ali	MoLF	Ethiopia
Abraham Tesfaye	MoLF	Ethiopia
Abate Mekuria	MoLF	Ethiopia
Ebhrahim Beyene	EPA	Ethiopia
Aberu Dugne	EPA	Ethiopia
Tezeta Hailemeskel	FAO SFE	Ethiopia
Patrick Kormawa	FAO SFE	Ethiopia
H.E Prof. Fekadu Beyene	MoLF	Ethiopia
Terefe Gameda	MoLF	Ethiopia

---

## Annex 2

# Photographs



ASL2050 Regional Launch Group

©FAO/Tamiru Legesse



©FAO/Tamiru Legesse

ASL2050  
Press Conference Panel  
(from left)  
Patrick Kormawa,  
FAO Subregional  
Coordinator for Eastern Africa;  
H.E Prof. Fekadu Beyene,  
Ethiopian Minister  
of Livestock and Fishery;  
Subhash Morzaria,  
Global Coordinator  
of FAO EPT-2; and  
Lindsay Parish, USAID



©FAO/Tamiru Legesse

ASL2050  
Ugo Pica-Ciamarra,  
FAO ASL2050  
Coordinator addresses  
(from left)  
Patrick Kormawa,  
FAO Subregional Coordinator  
for Eastern Africa;  
H.E Prof. Fekadu Beyene,  
Ethiopian Minister of Livestock  
and Fishery; and  
Leslie Reed, USAID Mission  
Director in Ethiopia

---

## Annex 3

# Indicators from working groups

### **1A THE EFFECTS OF ANIMAL DISEASES ON LIVESTOCK SYSTEMS**

#### **1. Mortality rate disaggregated by:**

- a. Disease
- b. Livestock system
- c. Species
- d. Age

#### **2. Morbidity rates disaggregated by:**

- a. Disease
- b. Livestock system
- c. Species
- d. Age

#### **3. Production levels disaggregated by:**

- a. Yield
- b. Draught power
- c. Weight gain

#### **4. Cost of disease prevention programmes disaggregated by:**

- a. Disease
- b. Species
- c. Livestock system

#### **5. Cost of disease management disaggregated by**

- a. Disease
- b. Species
- c. Livestock system

### **2A THE EFFECT OF LIVESTOCK SYSTEMS ON PUBLIC HEALTH**

1. Proportion of population with regular access to primary health care.
2. Proportion of population with access to safe water and sanitation.
3. Number of reported zoonotic disease cases.
4. Nutrition – proportion of people under 5 years old with severe malnutrition.
5. Proportion of the population with knowledge of food safety and hygiene.
6. Provision of public health professionals/facilities to detect and identify zoonotic diseases.
7. Proportion of farms meeting minimum biosecurity standards.

### **3A LIVESTOCK IMPACTS ON THE ENVIRONMENT**

1. Proportion of important sites of terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type. Protected areas can minimise the impact of extreme climate events, are a source of genetic resources, seed banks, and are important for ecosystem services such as pollination.
2. Amount of land that is degraded.

## **1A THE EFFECTS OF ANIMAL DISEASES ON LIVESTOCK SYSTEMS**

### **1. Mortality rate disaggregated by:**

- a. Disease
- b. Livestock system
- c. Species
- d. Age

### **2. Morbidity rates disaggregated by:**

- a. Disease
- b. Livestock system
- c. Species
- d. Age

### **3. Production levels disaggregated by:**

- a. Yield
- b. Draught power
- c. Weight gain

### **4. Cost of disease prevention programmes disaggregated by:**

- a. Disease
- b. Species
- c. Livestock system

### **5. Cost of disease management disaggregated by**

- a. Disease
- b. Species
- c. Livestock system

## **2A THE EFFECT OF LIVESTOCK SYSTEMS ON PUBLIC HEALTH**

1. Proportion of population with regular access to primary health care.
2. Proportion of population with access to safe water and sanitation.
3. Number of reported zoonotic disease cases.
4. Nutrition – proportion of people under 5 years old with severe malnutrition.
5. Proportion of the population with knowledge of food safety and hygiene.
6. Provision of public health professionals/facilities to detect and identify zoonotic diseases.
7. Proportion of farms meeting minimum biosecurity standards.

## **3A LIVESTOCK IMPACTS ON THE ENVIRONMENT**

1. Proportion of important sites of terrestrial and freshwater biodiversity that are covered by protected areas, by ecosystem type. Protected areas can minimise the impact of extreme climate events, are a source of genetic resources, seed banks, and are important for ecosystem services such as pollination.
2. Amount of land that is degraded.
3. Proportion of countries adopting relevant national legislation and adequately resourcing the prevention or control of invasive alien species.
4. Number of countries with national and local disaster risk reduction strategies.
5. Number of countries with integrated mitigation, adaptation and impact reduction and early warning in primary, secondary and tertiary curricula.

#### **4A THE EFFECTS OF LIVESTOCK SYSTEMS ON LIVELIHOODS**

1. Number of national level livestock policies, strategies and programmes reviewed and implemented as a result of the statistical data, evidence, information and knowhow generated by ASL2050.
2. Percentage improvement in government investment and expenditure in the livestock sector.
3. Number and value of new additional investments as a result of the policies, strategies and programmes influenced by the project.
4. Number of people engaged in livestock value chains, disaggregated by sex and age.
5. Changes in income of people working in livestock systems.

#### **1B THE EFFECTS OF ANIMAL DISEASES ON LIVESTOCK SYSTEMS**

1. Quantity of livestock products.
2. Production costs (antimicrobials, culling, vaccination, biosecurity).
3. Market and trade restrictions, import/export bans, market closures.
4. Change in production systems.
5. Increased technology use e.g. a shift from hand milking to milking machinery.

#### **2B THE EFFECTS OF LIVESTOCK SYSTEMS ON PUBLIC HEALTH**

##### **Thoughts**

1. Describe disease burden on population.
2. Antimicrobial resistance.
3. Food safety and water borne diseases.
4. Additional burden to the health system.
5. Capacity of the country to respond to livestock related disease outbreak.

##### **Indicators**

1. Number of outbreaks caused by zoonotic diseases.
2. Mortality and morbidity linked to zoonotic diseases.
3. Incidence of antibiotic use in agriculture.
4. Proportion of farms with certified biosecurity standards.
5. Country IHR JEE (Joint External Evaluations) rating for One Health capacities.

#### **3B ENVIRONMENT**

##### **Life on land (SDG 15)**

1. Forest protection 15.1.1.
2. Biodiversity – including domesticated livestock (15.5.1).
3. Land degradation (15.3.1).
4. Pollution of soil and water resources.

##### **Climate change (SDG 13)**

1. Greenhouse gas emissions – absolute and relative.
2. Adaptation/resilience in pastoral systems.

**4B THE EFFECTS OF LIVESTOCK SYSTEMS ON LIVELIHOODS**

1. Proportional livestock keepers and national population living below the national poverty line.
2. Proportional livestock keepers and national population living below the international poverty line.
3. Proportion of livestock keeping households who are food insecure (acute and chronic).
4. Proportion of livestock keeping households with access to basic services.
5. Proportion of livestock keeping households with secure land tenure.



---

## Annex 4

# Recommendations

### BACKGROUND

There is growing evidence that livestock systems in Africa are expected to change radically in the next 30–40 years. Although this development is likely to increase the supply of animal source foods, this could generate negative consequences for public health, environment and livelihoods, as experience elsewhere has shown. Understanding the long-term dynamics of livestock systems and their impacts is important to take action now, to ensure sustainable livestock systems in the future.

Africa Sustainable Livestock 2050 project presents an opportunity for the governments of Burkina Faso, Egypt, Ethiopia, Kenya, Nigeria and Uganda to assess the long-term dynamics of livestock systems; their likely impact on public health, environment and livelihoods; and identify appropriate policies that can support healthy and sustainable livestock systems for the future generations.

### RECOMMENDATIONS

#### Scope of ASL2050

- Better define boundaries of ASL2050, including timeline and activities (what it does; what it does not: e.g. farm level vs value chain; impact vs sustainability; etc.).
- Develop a template for drafting work plans for country level activities (stakeholder consultation; data gathering; data analysis; policy reviews; etc.).
- Coordinate work plans with LIDESA and other major regional and country initiatives.

#### Multi-stakeholder multi-sectoral approach

- In each country, identify all the key stakeholders to be engaged in the ASL2050 implementation (multi-sectoral/multi-disciplinary approach)
- Ensure that Statistics Authorities in each country are engaged in ASL2050 implementation.
- In each country, map existing initiatives (e.g. one health-networks/livestock policy hubs) to liaise with during ASL2050 implementation.

#### Institutional arrangements

- Establish a National Steering Committee comprising one representative (focal point) each from the Ministries in charge of Public Health, Livestock, and the Environment and a FAO staff; define Terms of Reference. Other Ministries will be informed and consulted during ASL2050 implementation as appropriate.
- Establish a Regional Committee, with representatives from Continental and Regional bodies, to facilitate cross-learning, further guidance, and scaling-up.
- Establish a regular reporting system to keep informed the steering committee of ASL2050 activities and outputs and receive feedback and guidance.
- Ensure that Technical Working Groups (existing or to establish) provide regular inputs to ASL2050 implementation.

- Develop a communication plan, also supporting information sharing between countries, FAO, PREDICT-2, P&R and other stakeholders as appropriate.

**Short term action**

- Prepare work plans for each of the target countries within 2 months.
- Launch ASL2050 in all target countries, within three months, coordinated by the Steering Committee with the objectives to validate the work plan and engage local stakeholders.

ONLINE PUBLICATION SERIES  
**FAO ANIMAL PRODUCTION AND HEALTH REPORTS**

1. Impact of animal nutrition on animal welfare – Expert Consultation, 26–30 September 2011, FAO Headquarters, Rome, Italy. 2012 (E)  
<http://www.fao.org/3/a-i3148e.pdf>
2. FAO's support to the One Health regional approach – Towards integrated and effective animal health–food safety surveillance capacity development in Eastern Africa. Report of the Workshop, Entebbe, Uganda, 23–24 January 2013. 2013 (E)  
<http://www.fao.org/3/a-i3391e.pdf>
3. Characterization and value addition to local breeds and their products in the Near East and North Africa – Regional Workshop, Rabat, Morocco, 19–21 November 2012. 2014 (E, Ar)  
<http://www.fao.org/3/a-i3622e.pdf>  
<http://www.fao.org/3/a-i3622a.pdf>
4. The Global Platform for African Swine Fever and other important diseases of swine – Rome, Italy, 5-7 November 2013. 2014 (E)  
<http://www.fao.org/3/a-i3739e.pdf>
5. The role, impact and welfare of working (traction and transport) animals – Report of the FAO – The Brooke Expert Meeting, FAO Headquarters, Rome, 13<sup>th</sup> – 17<sup>th</sup> June 2011. 2014 (E)  
<http://www.fao.org/3/a-i3381e.pdf>
6. Dog population management – Report of the FAO/WSPA/IZSAM Expert Meeting, Banna, Italy, 14-19 March 2011. 2014 (E)  
<http://www.fao.org/3/a-i4081e.pdf>
7. Towards a concept of Sustainable Animal Diets – Report based on the collated results of a survey of stakeholder views. 2014 (E)  
<http://www.fao.org/3/a-i4146e.pdf>
8. Regional workshop on brucellosis control in Central Asia and Eastern Europe. 2015 (E, R)  
<http://www.fao.org/3/a-i4387e.pdf>
9. The last hurdles towards Rift Valley fever control. 2015 (E)  
<http://www.fao.org/3/a-i4466e.pdf>
10. Understanding Ebola Virus at the Animal-Human Interface. 2016 (E)  
<http://www.fao.org/3/a-i5670e.pdf>
11. Understanding MERS-CoV at the Animal-Human Interface. 2016 (E)  
<http://www.fao.org/3/a-i5682e.pdf>
12. Africa Sustainable Livestock 2050 – Technical Meeting and Regional Launch, Addis Ababa, Ethiopia, 21–23 February 2017. 2017 (E)

Availability: May 2017

E - English  
Ar - Arabic  
R - Russian  
\*\* In preparation



Find more publications at  
<http://www.fao.org/ag/againfo/resources/en/publications.html>

ISBN 978-92-5-109749-6



9 7 8 9 2 5 1 0 9 7 4 9 6

I7222EN/1/05.17