

GF-TADs

GLOBAL FRAMEWORK FOR THE
PROGRESSIVE CONTROL OF
TRANSBOUNDARY ANIMAL DISEASES

Africa



Food and Agriculture
Organization of the
United Nations



World Organisation
for Animal Health
Founded as OIE

African
Union 

FAO Tools, Programmes, Regional Support on Laboratories

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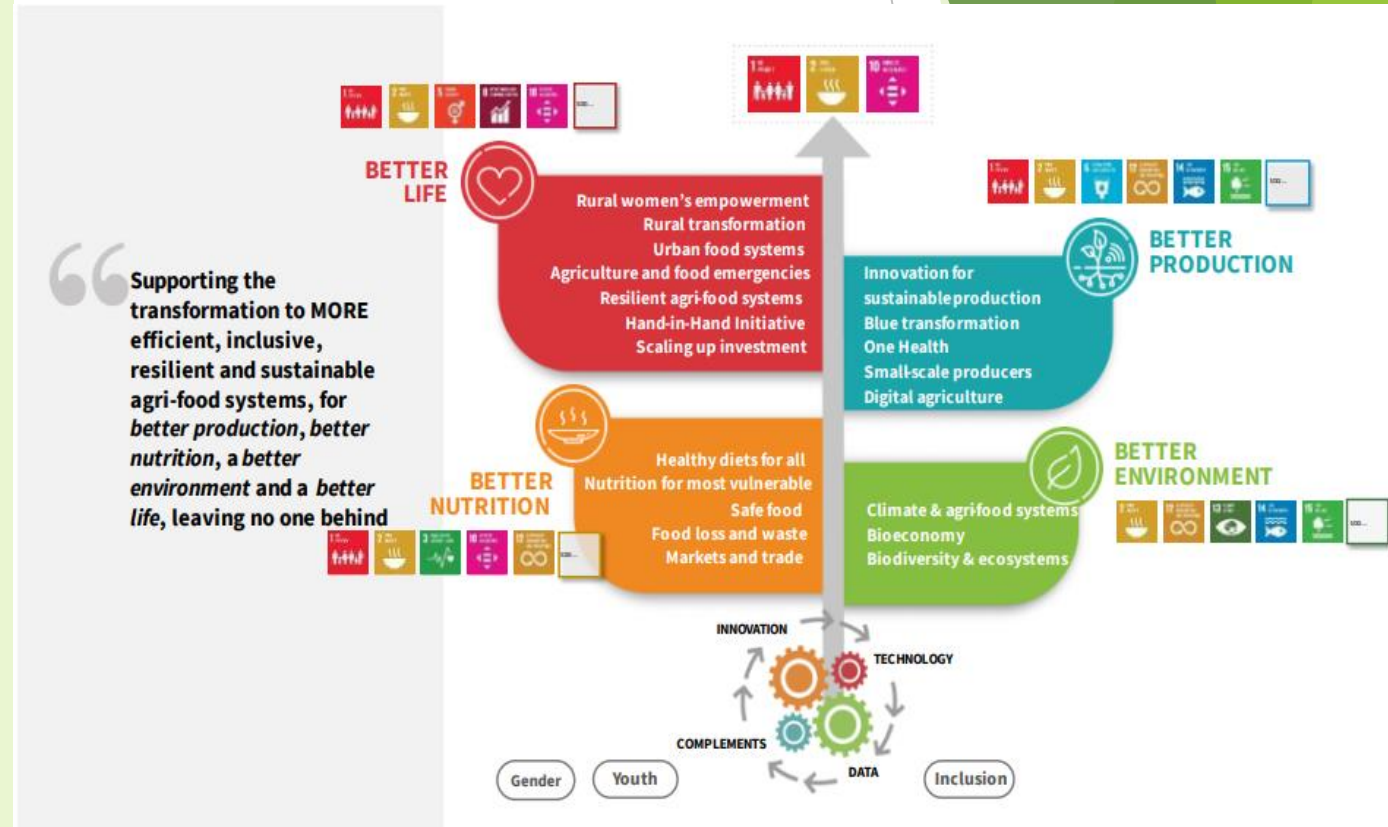
Outline of the Presentation

- FAO in Africa - How Animal Health and One Health are delivered?
- FAO laboratory support in Sub-Saharan Africa
- FAO tools in animal production and health
- Challenges and Way forward



Guiding Framework, Recommendation, Initiatives

- Guided by the FAO Strategic Framework 2022 - 31
 - Four betters: Better Production, Better Nutrition, Better Environment, Better Life
- Guidance
 - Recommendation from the FAO Africa Regional Conference
 - CAADP Kampala declaration 2025
 - COAG Subcommittee on Livestock - a recommendation from the first session
 - Sustainable Livestock Transformation and OH in Agrifood System initiative
 - Outcomes of COP28: Launch of a new report on “the Pathways towards lower livestock emissions



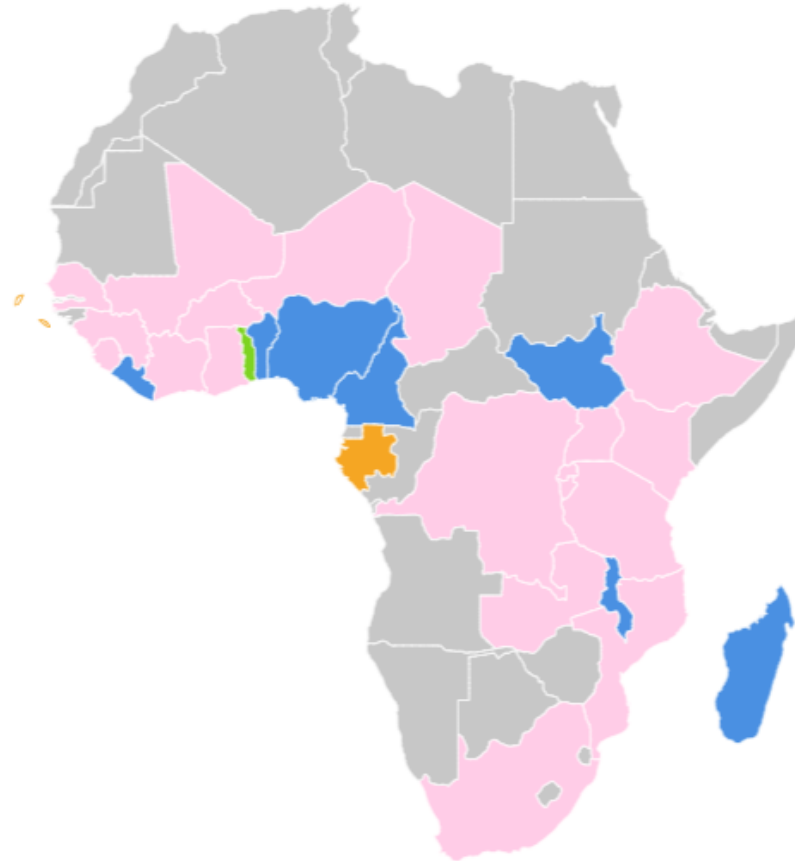
Key Projects/Activities in Animal Health

Countries with DTRA projects



- Burkina Faso
- Chad
- Côte d'Ivoire
- Ethiopia
- Guinea
- Kenya
- Mali
- Mozambique
- Niger
- Senegal
- Sierra Leone
- Tanzania
- Uganda
- Zambia

Countries with at least 2 projects



- Burkina Faso
- Burundi
- Cote d'Ivoire
- Chad
- D R Congo
- Ethiopia
- Ghana
- Guinea
- Kenya
- Mali
- Mozambique
- Niger
- Rwanda
- Senegal
- Sierra Leone
- South Africa
- Tanzania
- Uganda
- Zambia

Countries with Pandemic Fund projects



- Burkina Faso
- Burundi
- Chad
- D R Congo
- Ethiopia
- Ghana
- Rwanda
- Sierra Leone
- South Africa
- Tanzania
- Togo
- Uganda
- Zambia

Countries with ECTAD projects



- Benin
- Burkina Faso
- Burundi
- Cameroon
- Cote d'Ivoire
- D R Congo
- Ethiopia
- Ghana
- Guinea
- Kenya
- Liberia
- Madagascar
- Malawi
- Mali
- Mozambique
- Niger
- Nigeria
- Rwanda
- Senegal
- Sierra Leone
- South Africa
- South Sudan
- Tanzania
- Uganda
- Zambia

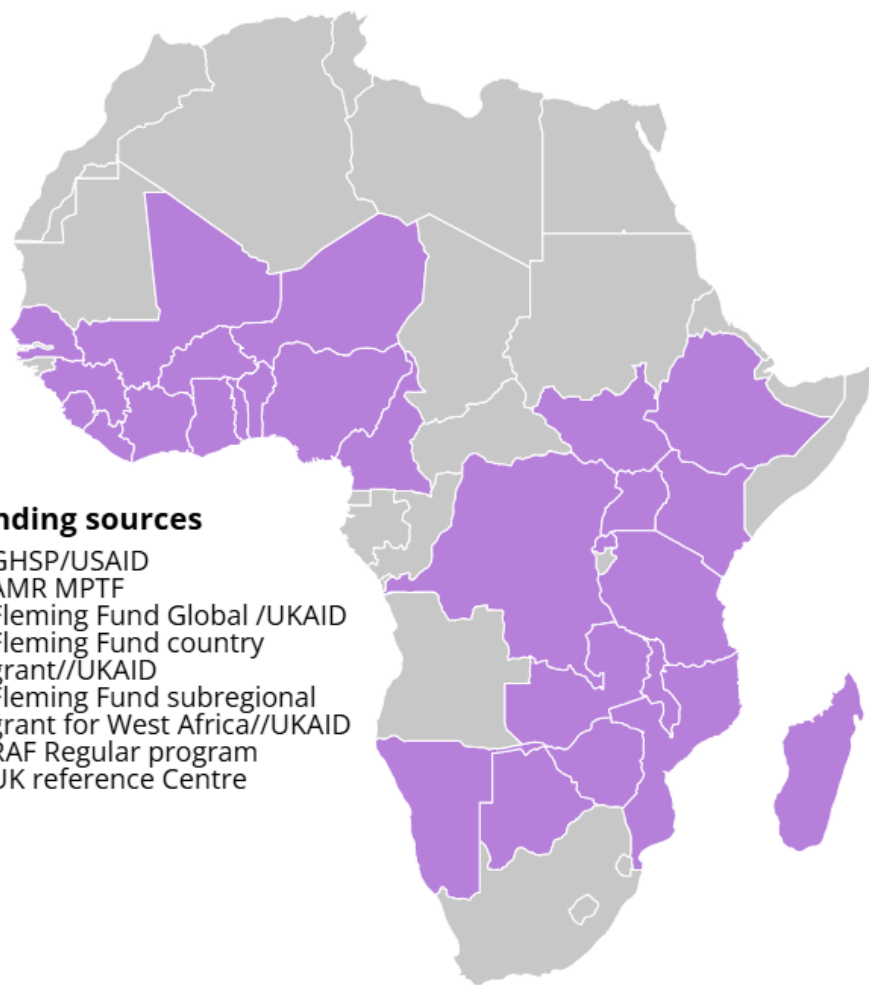
Countries under EMPRES (ARPA, APHIS)



- Gabon
- Ghana
- Guinea
- Tanzania
- Cabo Verde

AMR Mitigation Projects and Activities (2024)

Mitigation of Antimicrobial Resistance



Funding sources

- GHSP/USAID
- AMR MPTF
- Fleming Fund Global /UKAID
- Fleming Fund country grant//UKAID
- Fleming Fund subregional grant for West Africa//UKAID
- RAF Regular program
- UK reference Centre

Burkina Faso
Benin
Botswana
Cameroon
Cote d'Ivoire
DR Congo
Ethiopia
Ghana
Guinea
Kenya
Liberia
Mali
Madagascar
Malawi
Mauritius
Mozambique
Namibia
Niger
Nigeria
Rwanda
Senegal
Seychelles
Sierra Leone
South Sudan
Tanzania
Togo
Uganda
Zambia
Zimbabwe

Improved

- Detection of AMR threats
- Community-level good practices
- Awareness among governments, producers, traders and other stakeholders

Achieved by

- Supporting countries AMR NAP
- Enhance laboratory assessments and AMR surveillance capacities
- Strengthening capacities for early and accurate detection of AMR bacteria
- Accelerating behavioural changes

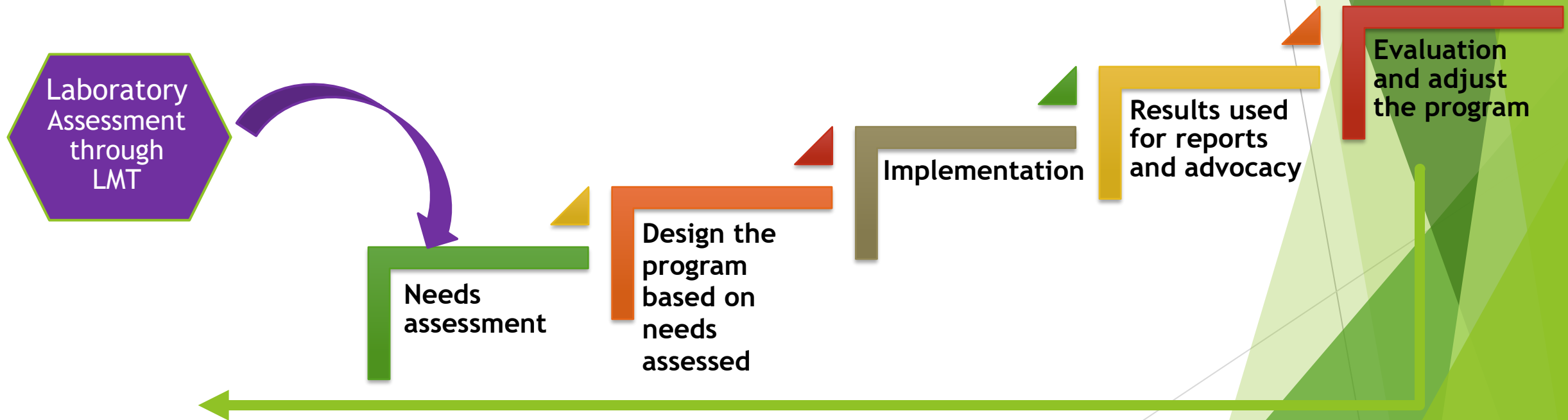
FAO Laboratory Support in Africa

- Transforming laboratory infrastructure and capacities
- Capacity Building
- Strengthening the specimen referral and transport system
- Laboratory assessment and diagnostic capacities
- Quality assurance and governance

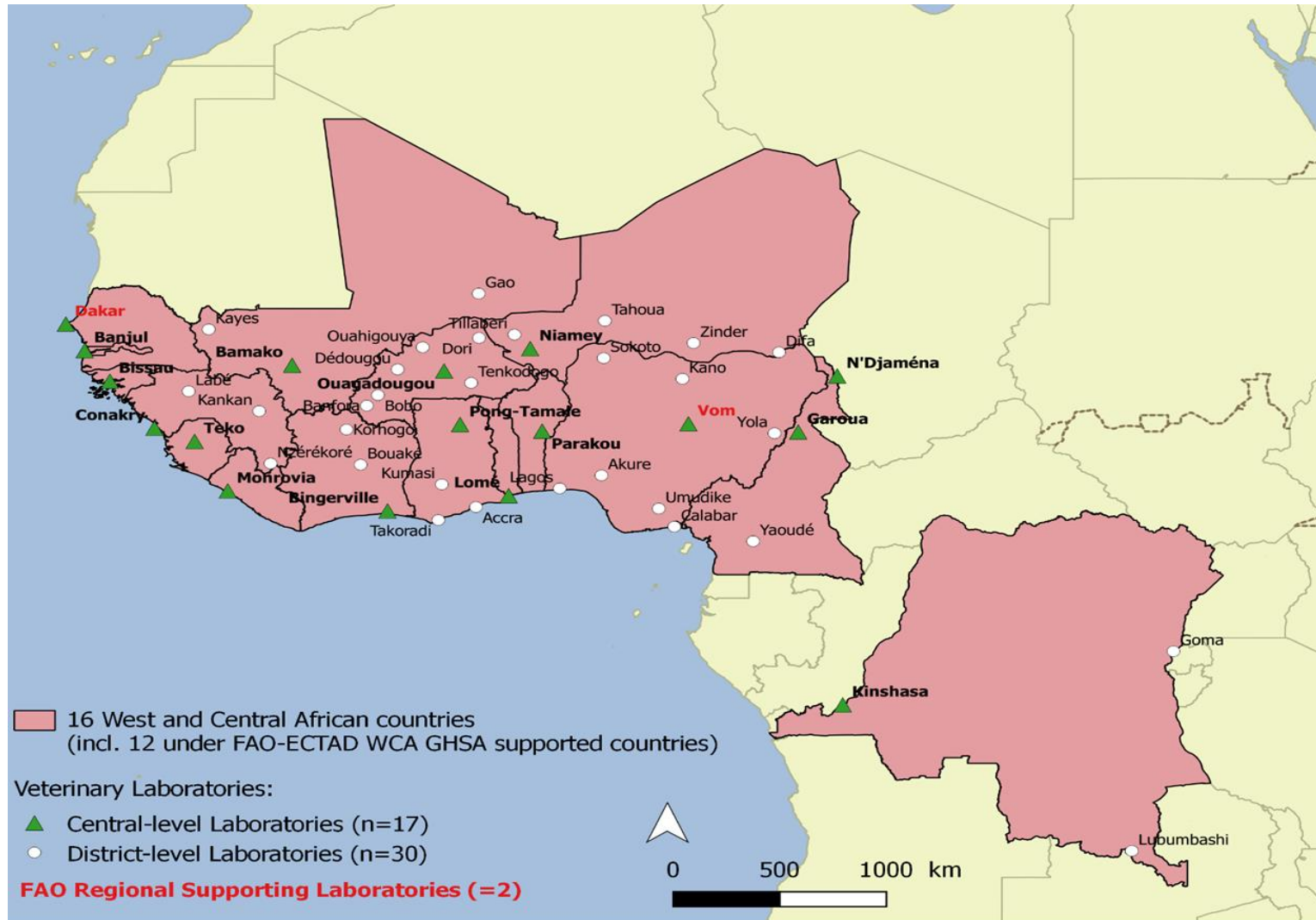


Laboratory Capacity Building

We do need assessments to define a stepwise approach for the development of an action plan.



Lab Support: Vet Labs in Western and Central Africa



- Benin
- Burkina Faso
- Cameroon
- Côte d'Ivoire
- DR Congo
- Ghana
- Guinea
- Liberia
- Mali
- Niger
- Nigeria
- Sénégal
- Sierra Leone
- Togo

Highlights & Results: West and Central Africa



Rapid detection of TADS/PDZ in all supported countries:

- Shortened turnaround time (**30 days to < 2 days**);
- Tested PZDs using basic and molecular techniques.



LIMS enhanced samples traceability and timely reporting:

- Increased consistency and quality data and reports;
- Improved service delivery.



Proficiency tests for various disease

- Improved accuracy and reliability of results.

Enhanced diag. capacity: in year 1, only 4/13 vet labs test for **AI**. Now, all the labs using serology & and mole. tech

Participation on **COVID-19 testing**: testing human COVID-19 suspected samples. Ex Ghana.

Accreditation- **ISO17025**: LANAVET-Cameroon (2019), LNERV-Senegal (2022) and NVRI-Nigeria (2023)

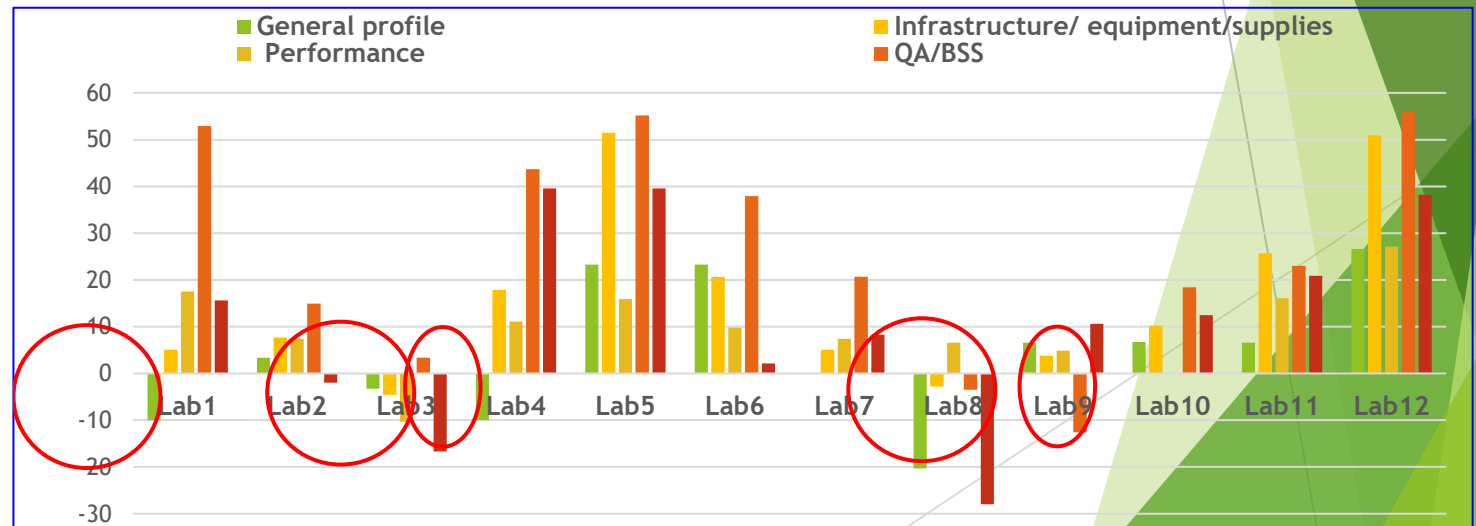
LMT-core results show positive trends in WCA National VetLabs

5 LMT Areas	Lab1		Lab2*		Lab3		Lab4		Lab5		Lab6		Lab7		Lab8*		Lab9		Lab10		Lab11*		Lab12	
	2016	2022	2016	2018	2016	2019	2016	2023	2016	2021	2016	2023	2016	2023	2015	2022	2017	2021	2016	2021	2016	2018	2016	2023
General profile	46.7	36.7	83.3	86.7	60.0	56.7	56.7	46.7	26.7	50.0	26.7	50.0	53.3	53.3	80.0	59.7	76.7	83.3	60.0	66.7	56.7	63.3	16.7	43.3
Infrastructure/ equipment/supplies	37.2	42.3	56.4	64.1	53.3	48.7	32.1	50.0	6.1	57.6	30.7	51.3	34.6	39.7	59.0	56.2	73.1	76.9	51.3	61.5	39.7	65.4	2.7	53.6
Performance	22.2	39.7	66.7	74.1	54.3	44.0	33.3	44.4	18.8	34.7	19.8	29.6	38.3	45.7	54.3	60.9	53.1	58.0	50.6	50.6	44.4	60.5	3.5	30.6
QA/BSS	13.8	66.7	64.4	79.3	46.0	49.4	24.1	67.8	8.0	63.2	16.1	54.0	27.6	48.3	51.7	48.2	77.0	64.4	32.2	50.6	39.1	62.1	4.8	60.7
Collaboration/ networking	33.3	48.9	70.8	68.8	50.0	33.3	25.0	64.6	27.1	66.7	27.1	29.2	54.2	62.5	62.5	34.5	31.1	41.7	50.0	62.5	60.4	81.3	5.6	43.8

Colour code	0-20%	20-40%	40-60%	60-80%	80-100%

1. General profile : 4/12 labs
2. Infrastructure : 2/12 labs
3. Performance : 1/12 lab
4. QA/BSS : 2/12 labs
5. Collaboration/networking : 2/12 labs

*Accredited labs ISO-17025



WCA Laboratory PZDs Detection Capacity Enhanced (2016 vs 2023)

Priority Zoonotic diseases under ECTAD:

- Anthrax
- Avian Influenza
- Bovine Tuberculosis
- Brucellosis
- Crimean Congo Haemorrhagic Fever
- Dengue fever
- Lassa Fever
- MERS-CoV
- Rabies
- Rift Valley Fever
- Salmonellosis
- SARS CoV 2
- Yellow Fever

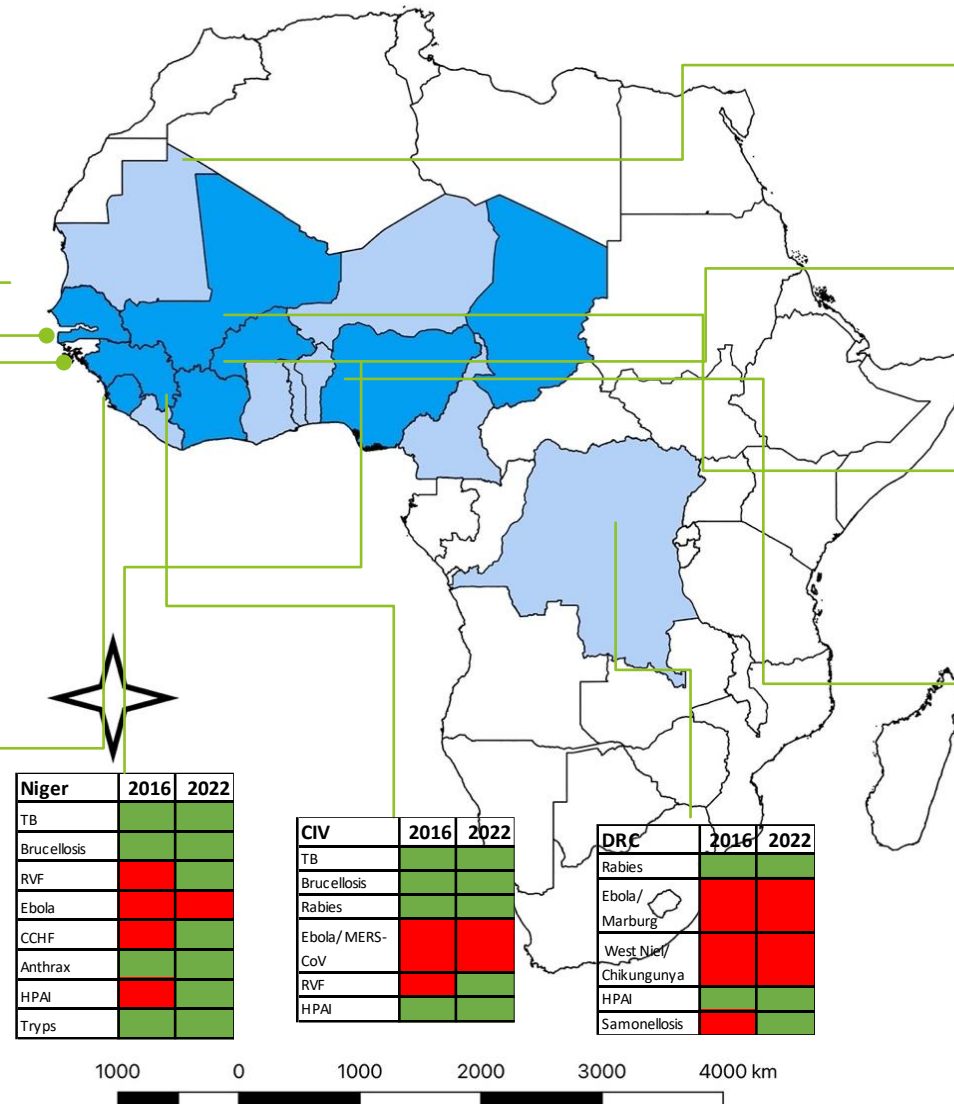
Capable to test
 Not Capable to test (BSL3/4 not in place)

Senegal	2016	2022
Rabies	Capable to test	Capable to test
HPAI	Capable to test	Capable to test
TB	Capable to test	Capable to test
Ebola/ Marburg	Not Capable to test	Not Capable to test
Anthrax	Capable to test	Capable to test
RVF	Capable to test	Capable to test

Guinea	2016	2022
HPAI	Capable to test	Capable to test
Brucellosis	Capable to test	Capable to test
Rabies	Not Capable to test	Capable to test
Ebola	Not Capable to test	Not Capable to test
Anthrax	Not Capable to test	Capable to test

Sierra Le	2016	2022
Rabies	Not Capable to test	Capable to test
Ebola	Not Capable to test	Not Capable to test
NCD	Capable to test	Capable to test
Brucellosis	Capable to test	Capable to test
HPAI	Not Capable to test	Capable to test
Anthrax	Not Capable to test	Capable to test

Liberia	2016	2022
Rabies	Not Capable to test	Capable to test
TB	Capable to test	Capable to test
Ebola/ Marburg	Not Capable to test	Not Capable to test
Brucellosis	Capable to test	Capable to test
Yellow Fever	Not Capable to test	Not Capable to test



Niger	2016	2022
TB	Capable to test	Capable to test
Brucellosis	Capable to test	Capable to test
RVF	Not Capable to test	Capable to test
Ebola	Not Capable to test	Not Capable to test
CCHF	Not Capable to test	Capable to test
Anthrax	Capable to test	Capable to test
HPAI	Not Capable to test	Capable to test
Tryps	Capable to test	Capable to test

CIV	2016	2022
TB	Capable to test	Capable to test
Brucellosis	Capable to test	Capable to test
Rabies	Capable to test	Capable to test
Ebola/ MERS-CoV	Not Capable to test	Not Capable to test
RVF	Not Capable to test	Capable to test
HPAI	Capable to test	Capable to test

DRC	2016	2022
Rabies	Capable to test	Capable to test
Ebola/ Marburg	Not Capable to test	Not Capable to test
West Nile/ Chikungunya	Not Capable to test	Not Capable to test
HPAI	Capable to test	Capable to test
Salmonellosis	Not Capable to test	Capable to test

Nigeria	2016	2022
Monkeypox	Capable to test	Capable to test
Lassa Fever	Not Capable to test	Not Capable to test
HPAI	Capable to test	Capable to test
Rabies	Capable to test	Capable to test
TB	Capable to test	Capable to test




Mali	2016	2022
Rabies	Capable to test	Capable to test
RVF	Capable to test	Capable to test
TB	Capable to test	Capable to test
Brucellosis	Capable to test	Capable to test
HPAI	Capable to test	Capable to test

Ghana	2016	2022
Rabies	Capable to test	Capable to test
Brucellosis	Capable to test	Capable to test
Anthrax	Capable to test	Capable to test
TB	Capable to test	Capable to test
Cysticercosis	Capable to test	Capable to test

Burkina Faso	2016	2022
Anthrax	Capable to test	Capable to test
Rabies	Capable to test	Capable to test
HPAI	Capable to test	Capable to test
Brucellosis	Capable to test	Capable to test
Dengue Fever	Not Capable to test	Capable to test

Legend
 FAO-ECTAD Support Countries
 FMD-DTRA Target Countries

Highlights and Results: Lab support in ESA


 Food and Agriculture Organization of the United Nations
 
 SUSTAINABLE DEVELOPMENT GOALS
 
 USAID FROM THE AMERICAN PEOPLE

ETHIOPIA

Laboratory strengthening

10 laboratories supported


8/10 targeted labs able to test using FAO recommended algorithms

Four labs targeted for installation of LIMS*

Seven labs are demonstrating stable or increasing LMT scores

46 professionals trained on Laboratory topics

B: Enhanced forecasting, early warning, detection, and surveillance systems





 NAHDIC and 9 Regional state labs (Assela, Hirna, Sodo, Kombolcha, Bahir Dar, Bedele, Mizan, Assosa, Semera)

Three implementation tools developed

- Laboratory waste management guideline
- Lab specific plans for three sub-national laboratories (Hirna, Assela and Kombolcha)
- Sample referral network guideline developed by NAHDIC

100% of samples received were tested

*Laboratory Information Management System


 Food and Agriculture Organization of the United Nations
 
 SUSTAINABLE DEVELOPMENT GOALS
 
 USAID FROM THE AMERICAN PEOPLE

TANZANIA

Laboratory strengthening

12 laboratories supported

All (12/12) targeted labs able to test using FAO recommended algorithms


12 labs targeted for installation of LIMS*

Five labs targeted for AMR testing

Two labs are demonstrating stable LMT scores

29 professionals trained on Laboratory topics

B: Enhanced forecasting, early warning, detection, and surveillance systems





 Tanzanian Veterinary Laboratory Agency (TVLA) –CVL, Tanzanian Veterinary Laboratory Agency (TVLA)- CIDB, Zanzibar Central Veterinary Laboratory and **9 district labs** (Iringa, Mwanza, Dodoma, Tabora, Arusha, Tanga, Kigoma, Mtwara, Sumbawanga)

Three implementation tools developed

- SOP for waste management
- Training package for Bio risk assessment and practice
- National biosecurity and biosafety training curriculum

57% of samples received were tested


*Laboratory Information Management System


 Food and Agriculture Organization of the United Nations
 
 SUSTAINABLE DEVELOPMENT GOALS
 
 USAID FROM THE AMERICAN PEOPLE

Mozambique

Laboratory strengthening

Seven laboratories supported


 Central Veterinary Laboratory (CVL) – Regional Veterinaries Labs (Manica, Gaza and Nampula), Provincial Veterinary Labs (Pemba, Quelimane, Sofala and Inhambane)

Laboratory Biosecurity Manual




Laboratory Quality Assurance Manual

Two training programmes developed/revised

59 Professionals (31 male, 28 female) trained on Lab topics

Enhanced forecasting, early warning, detection, and surveillance systems


*Laboratory Information Management System


 Food and Agriculture Organization of the United Nations
 
 SUSTAINABLE DEVELOPMENT GOALS
 
 USAID FROM THE AMERICAN PEOPLE

ZAMBIA

Laboratory strengthening

Nine laboratories supported


 National Veterinary Laboratory -Central Veterinary Research Institute(CVRI) Regional Veterinary Laboratories - Mongu, Choma, Isoka, Kasama, Ndola, Solwezi, Chipata District Veterinary Laboratories - Kabwe.

One lab able to test using FAO recommended algorithms

Three labs targeted for AMR testing- (Ndola, Solwezi, Kasama)

79 professionals trained on Lab topics

Enhanced forecasting, early warning, detection, and surveillance systems

*Laboratory Information Management System

Lab support - ESA

- Intra-regional lab networking EARLN/EAC, IGAD; LTC/SADC; RESOLAB/ECOWAS, RSLs
- Extra-regional lab networking with FAO reference centers on zoonotic diseases such as RVF, HPAI, Rabies, Brucellosis
- Regional biosecurity & biosafety and QA frameworks
- Multisectoral collaboration with public health and Environment sector
- Use of Innovative technologies including portable PCR, metagenomics platforms
- Multisectoral collaboration (Vet labs testing of human samples, IATA sample shipment)



LMT results show positive trends in lab capacities- ESA

• Main gaps identified

- Deficiencies in Quality Management System implementation
- Old/uncalibrated/no equipment and poor reagent supply
- Inadequate biosafety and biosecurity practices

LMT Area result	Laboratory													
	A			B			C			D			E	
	2018	2020	2022	2018	2020	2022	2018	2020	2022	2018	2020	2022	2021	2023
General laboratory profile	86.7	93.3	93.3	83.3	86.7	83.3	76.7	80.0	83.3	85.2	88.9	90.0	53.3	73.3
Infrastructure, equipment, supplies	67.9	78.2	80.8	52.6	60.3	72.5	42.3	53.8	73.1	51.0	69.2	76.2	29.5	58.7
Laboratory performance	75.3	75.3	74.1	69.1	75.9	61.1	32.1	54.3	66.7	55.6	60.3	54.9	43.1	51.9
QA, Biosafety/Biosecurity	62.1	81.6	81.6	56.9	74.7	75.9	26.4	52.9	71.3	59.8	64.4	79.8	23.0	42.7
Lab collaboration and networking	77.1	77.1	75.0	58.3	64.6	60.4	29.2	43.8	54.2	37.5	52.1	70.8	2.1	66.7

Colour code	0-20%	20-40%	40-60%	60-80%	80-100%

How are LMT results used?

- Regional QA and BSBS Roadmap programme
- Participation in EQA/PTs including subnational labs
- Provision of equipment, calibration services and reagents

Highlights and Results - ESA



Development of OH BRM Curriculum (3), improved biorisk management



Improvement in JEE critical capacity scores across the Action Packages (AMR, ZD, BS/BS, NLS, Surveillance, HR)



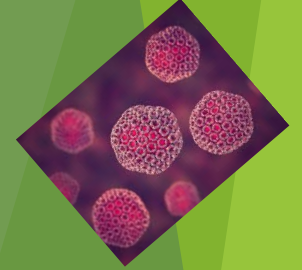
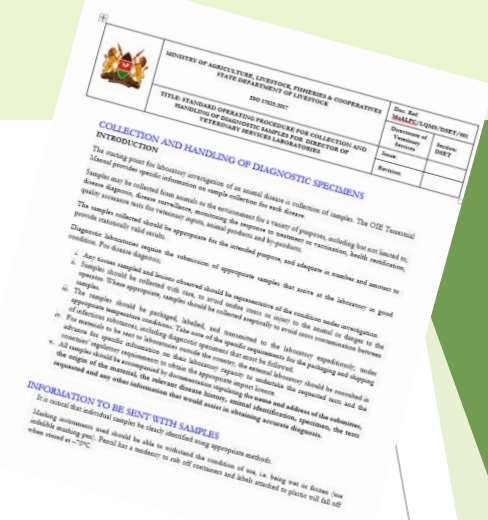
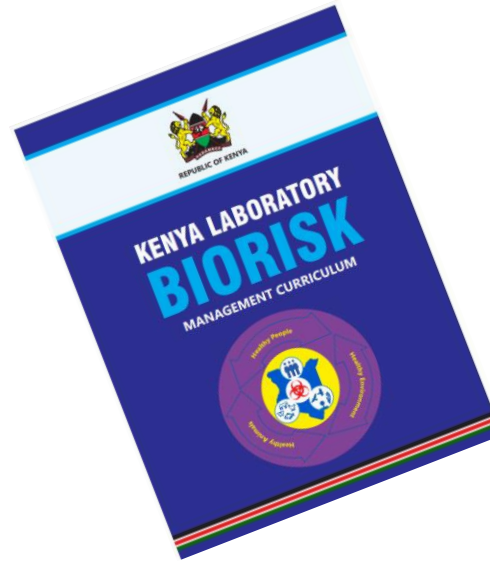
Real time connectivity of LIMS between National and sub national labs reduced turn round time of sample submission to delivery results from 7 days to 1-2 days



ISO/IEC 17025:2017 accreditation for >5 laboratories in Ethiopia, Kenya, Tanzania, Uganda=quality testing results



Rapid and accurate diagnosis of >5 PZDs using core tests at central level, faster response times during outbreaks



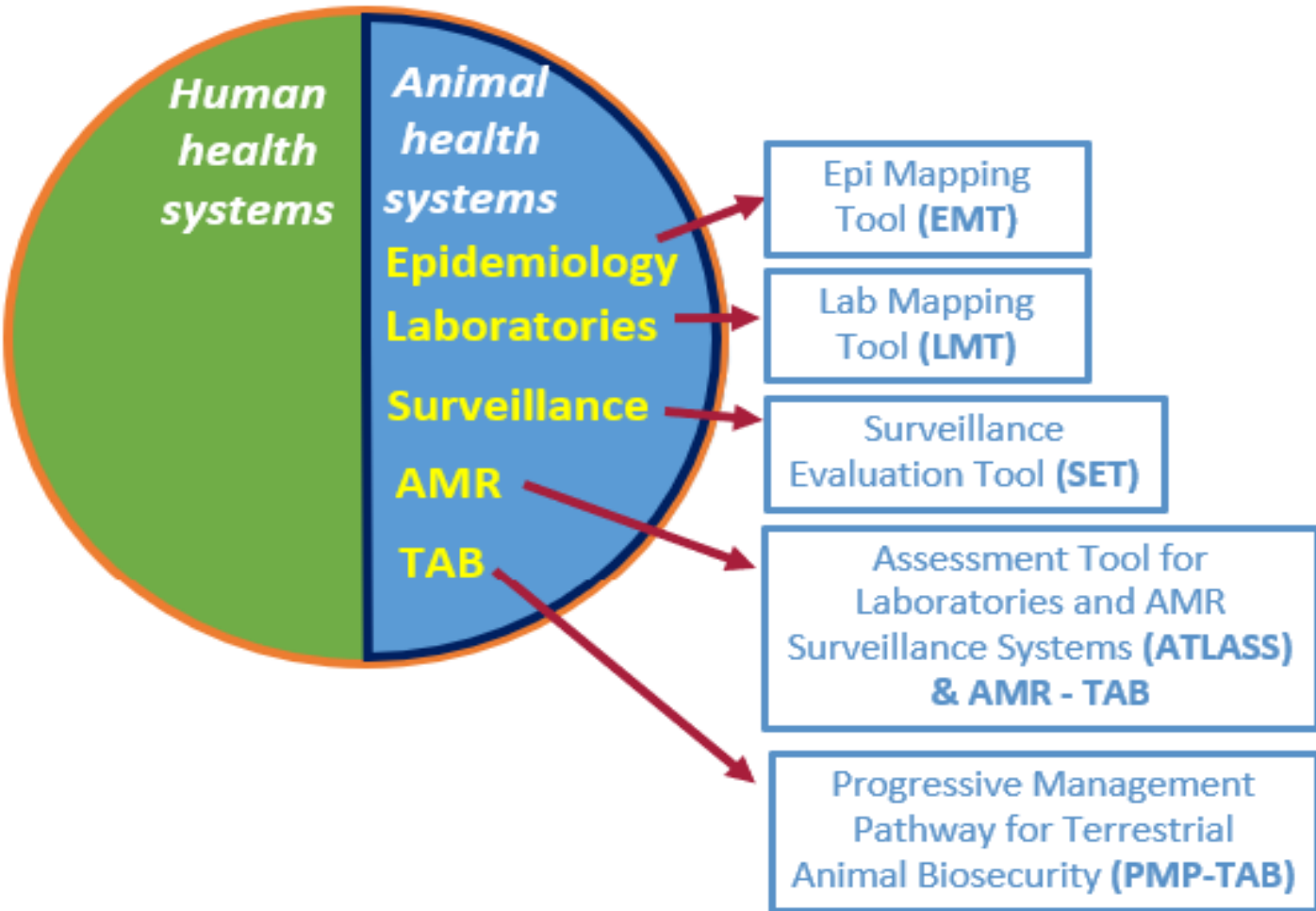
“All the data I need is on my PC and it greatly expedited my decision without the need for paper file retrieval from the center’s archive”

Avian Influenza A virus and H5 and H7 subtypes in clinical samples using real time PCR; Antibodies against FMD using ELISA

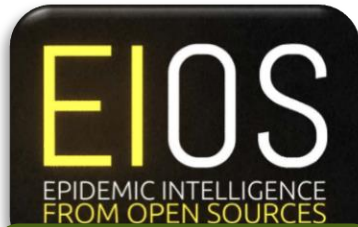


Rapid response and reduced turn around time (<5 days), accurate diagnosis of RVF via PCR at the Central Veterinary Laboratory, Kabete during outbreaks following sustained capacity building

FAO's tools for disease prevention and control



Disease Intelligence and Early Warning tools



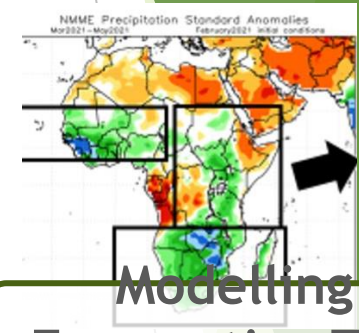
Rumors Tracking



Global Disease Intelligence



Real Time Disease Reporting



Modelling & Forecasting Tools - DST-RFV/AI!

Early Warning Signals

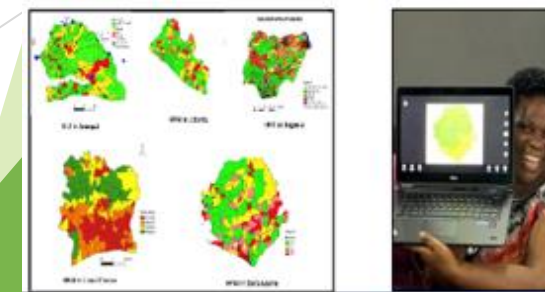
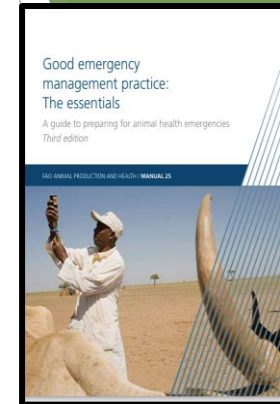
Rapid Risk Assessment

Early Action



Preparedness and response tools

- Good Emergency Management Practice (GEMP)
- Joint Risk Assessment (JRA) - using OH approach involving relevant sectors
- Joint Outbreak Investigation (JOIN) - following OH approach
- Risk-SPORT - for supporting risk-based surveillance development
- In-Service Applied Veterinary Epidemiology Training (ISAVET)
- FAO Virtual Learning Centers - providing online training for to a wider audience
- Risk mapping training toolkits (basic, intermediate, advanced level) - for strengthening VS capacity on disease/risk mapping, assessment and high-risk areas identification for disease surveillance optimization



Animal Production Tools

The Global Livestock Environmental Assessment Model - interactive (GLEAM-i)



Home Baselines About Version history Log in?

GLEAM-i is the first open, user-friendly and livestock specific tool designed to support governments, project planners, producers, industry and civil society organizations to calculate greenhouse gas emissions using IPCC Tier 2 methods. GLEAM-i can be used in the preparation of national inventories and in ex-ante project evaluation for the assessment of intervention scenarios in animal husbandry, feed and manure management.

GLEAM-i is developed by FAO with the support of the World Bank and the International Finance Corporation - IFC. GLEAM-i guidelines can be found [here](#) and training videos are available for [introduction](#), [technical features](#) and [practice exercises](#).

GET STARTED!

Region: Country:

Start simulation !

While the methodology used by GLEAM-i is scientifically robust, default input parameters should be reviewed and care should be taken if trying to compare these outcomes to individual country or regional studies. These studies may assess different parts of the livestock systems, have had access to more specific input parameters, utilize a smaller sample size or report for different purposes and as such applying different methodological approaches.

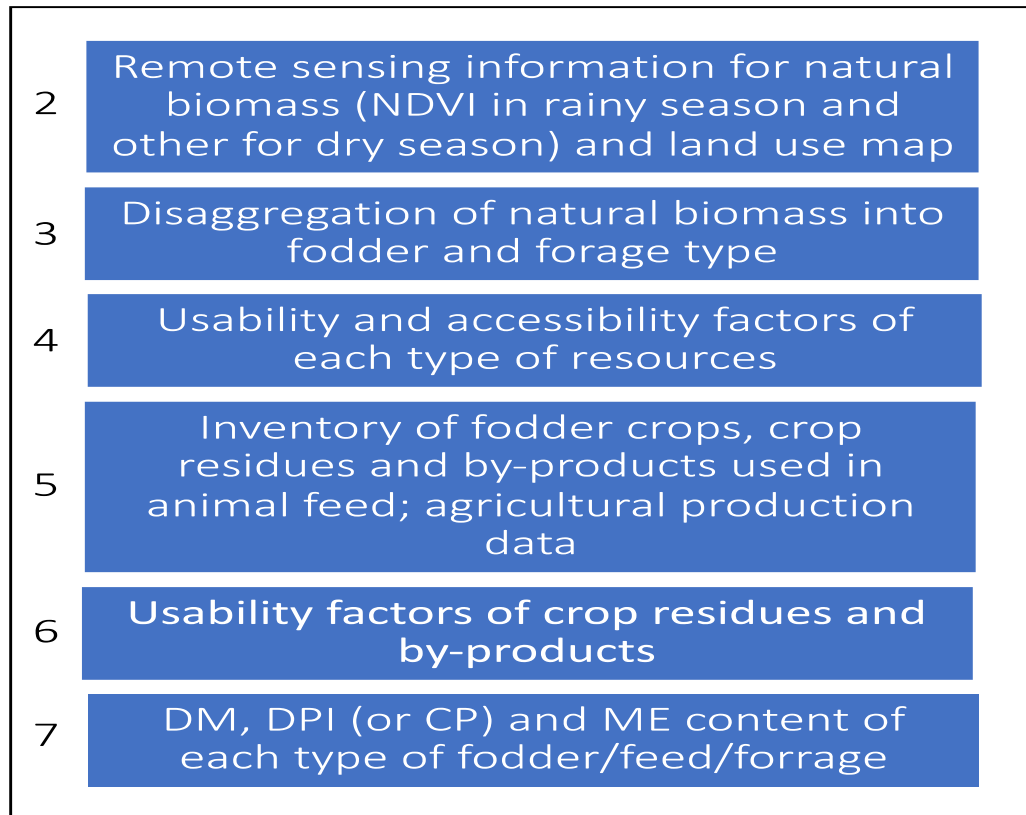
- Web application publicly available to assess GHG emissions from the livestock sector
- IPCC methodology, Tier 2 approach
- Life cycle assessment approach
- Different Production Systems
- Assess Projects and Programmes
- Comparing baselines and scenarios
- Results :
 - Absolute emissions
 - Emission intensities
 - Production and feed intake

The Feed Balances Sheet

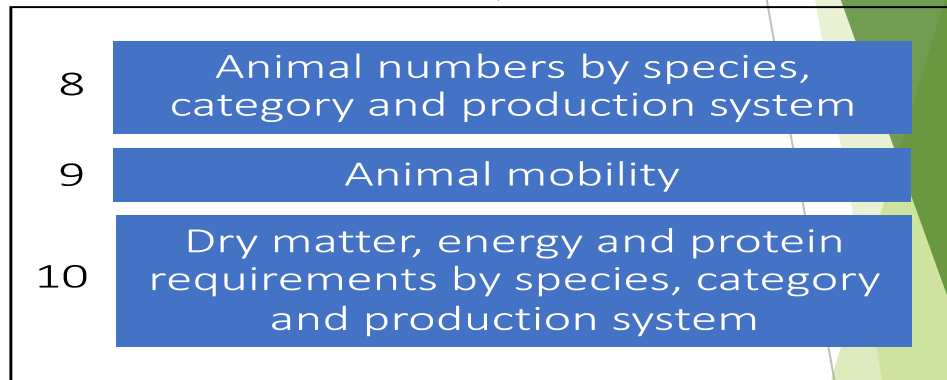
a tool for planning the use of resources and enhancing resilience in tropical grazing livestock

1 Definition of geographical unit and seasons

AVAILABLE RESOURCES



ANIMAL REQUIREMENTS



11 FEED BALANCE

12 Projections under different climate scenarios

Summary of the steps to follow while using the Feed Balance Sheet

Livestock Sector - Investment and Policy Toolkit



- Establish strategies and action plans for livestock at different scales,
- Make stronger advocacy at government level as well as with partners, and better justify and prioritize investment

MAKING RESPONSIBLE DECISIONS

Way forward: Challenges /solutions

Challenges

- Underreporting of diseases & inadequate data from wildlife, private sectors
- Absence of data sharing mechanism among sectors /use of multiple platforms for data sharing
- Lack of samples tested in Vet Labs
- Inadequate/lack of qualified workforce (epi, Lab etc)
- Weak capacity in lab maintenance, calibration, reagent supply, etc.
- Low priority, underfunding/donor dependency

Proposed solutions/opportunities

- Support community-based, & integrated surveillance (data from the private sector, wildlife, value chain, etc.)
- Interoperability between tools/platforms through OH operationalization
- Support active surveillance of **TADs** and sample transfer system
- Use of national and regional expertise/ regional collaboration (AU-IBAR, RECs)
- Continue supporting capacity building and workforce development
- Advocacy for domestic investments & partnership



GF-TADs

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Thank you