



Food and Agriculture Organization  
of the United Nations

# FAO support for veterinary laboratories in Member countries



---

**Artem METLIN**, Animal Health Officer, Laboratory Unit Coordinator, NSAH, Food and Agriculture Organization of United Nation, Rome, Italy



Food and Agriculture  
Organization of the  
United Nations

SUSTAINABLE  
DEVELOPMENT  
GOALS

FAO has pioneered the progressive management pathway (PMP) approach to assist countries, industries and producers to gradually implement improved and sustainable levels of risk management.

## The PMP approach has been applied to:

- aquaculture biosecurity ([PMP/AB](#))
- antimicrobial resistance ([PMP-AMR](#))
- and biosecurity in beekeeping ([PMP-BMB](#))
- PMP for terrestrial animal biosecurity ([FAO-PMP-TAB](#)) is being developed to strengthen biosecurity in terrestrial animal production and associated value chains

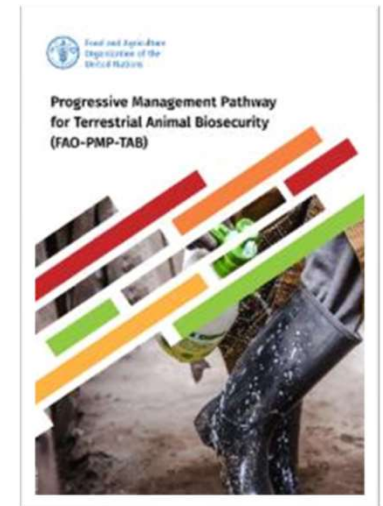
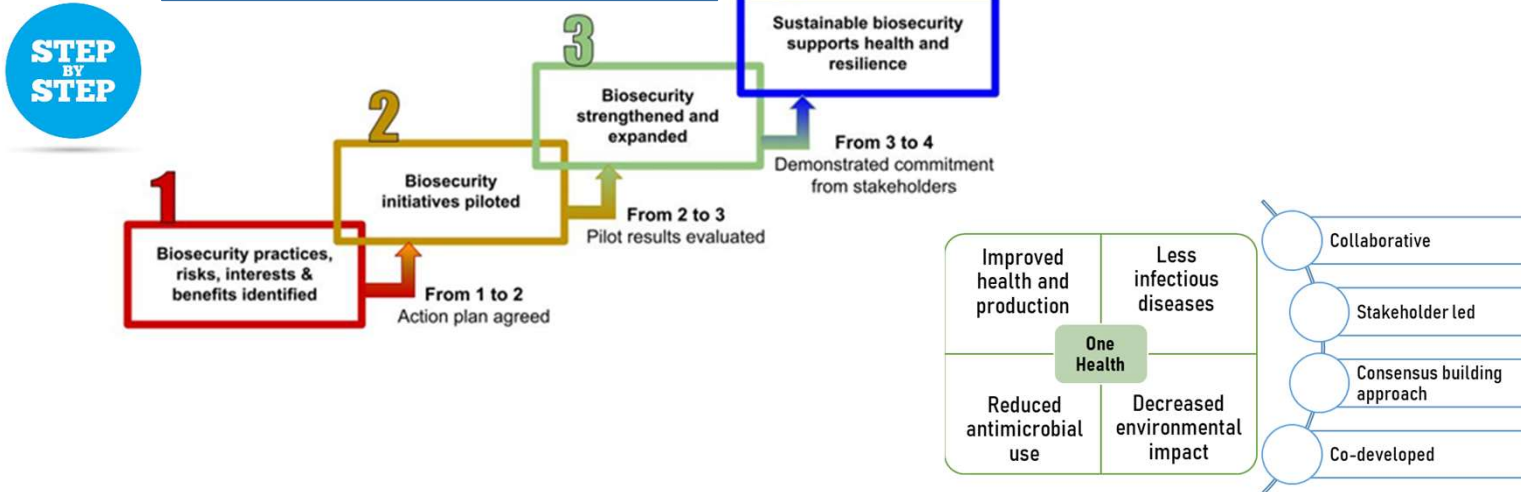




## PMP-TAB: Progressive Management Pathway for Terrestrial Animal Biosecurity

FAO defines biosecurity as a **strategic** and **integrated** approach that encompasses the policy and regulatory frameworks for **analyzing and managing relevant risks** to **human, animal and plant life and health**, and associated risks to the environment

### PROCESS, NOT SCORING





Food and Agriculture  
Organization of the  
United Nations



## Community of Practice (CoP) for Terrestrial Animal Biosecurity

- Share and generate knowledge about terrestrial animal biosecurity
- Promote collaboration amongst members and experts
- Membership inclusive
- Hosted on FAO's Virtual Learning Center (VLC) Platform
- Include monthly webinars, knowledge repository/toolkit, member-driven activities and outputs

**Join us!**

Visit <https://virtual-learning-center.fao.org/mod/page/view.php?id=8724&forceview=1>

or contact us at [PMP-TAB@fao.org](mailto:PMP-TAB@fao.org)

The screenshot displays the FAO Virtual Learning Centers website. At the top, there is a navigation menu with links for 'About', 'Regional Centers', 'Courses', 'Support', and 'Resources'. Below the menu is a large banner image of a person in a blue uniform and mask standing in a large poultry processing facility. Underneath the banner is the title 'Community of Practice on the Progressive Management Pathway for Terrestrial Animal Biosecurity'. Below this title is a grid of eight smaller images, each with a caption and a 'View More' button. The images and their captions are: 1. Introduction, 2. Community members, 3. Knowledge Hub, 4. PMP-TAB toolkit, 5. Subgroups of the CoP, 6. CoP Media, 7. Discussion Forums, and 8. Case study database. The 'Subgroups of the CoP' image includes a small text box with a warning icon and the text: 'Not available unless: • You belong to Participants\_ (hidden otherwise) • You belong to a group in Participants\_g (hidden otherwise)'. The 'Discussion Forums' and 'Case study database' images also have small text boxes with the text 'View More'.



## Building surveillance in countries: Laboratory capacity



### Capacity building for sustainable and reliable functioning of animal health laboratories in Member States for improved national capacities to *prevent, detect and respond* to confirmed animal infectious disease events:



Basic and high-level diagnostic testing to enable rapid and reliable diagnosis of transboundary and priority zoonotic diseases.



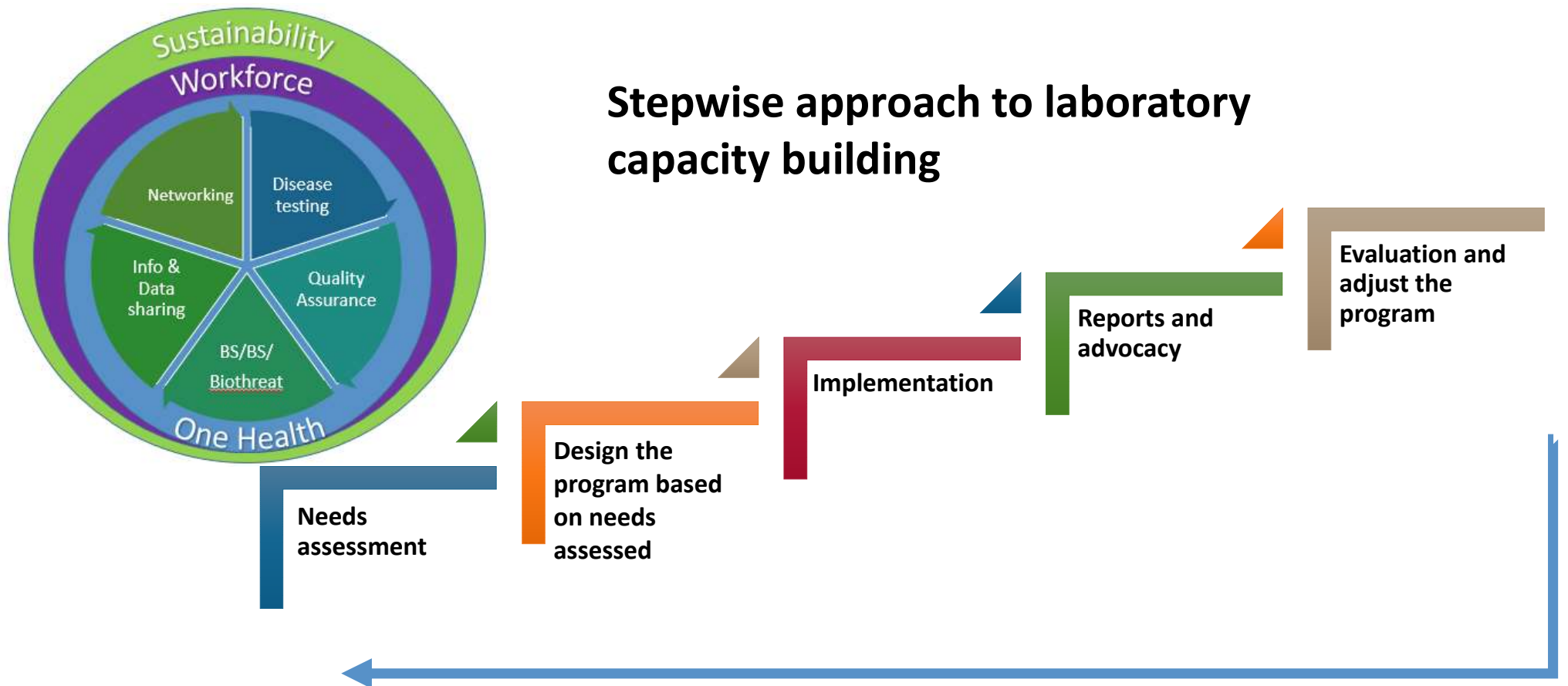
Provide support for decision making by the Animal & One Health surveillance systems through sharing and application of reliable laboratory data



Increase connection and collaboration amongst national and subnational laboratories as well as with regional and international communities.



## Laboratory Capacity Building- From Global to Countries





## The FAO-LMT tools family

- ✓ LMT-Safety module to assess in more details Biosafety, biosecurity and staff security;
- ✓ Part of a larger list of LMT modules:
  - ✓ General LMT-Core: generic veterinary labs capacities and capabilities (17 categories, 108 Sub-categories)
  - ✓ LMT-AMR and LMT-bacteriology modules (part of ATCLASS)
  - ✓ LMT-Biothreat module for lab capacity to detect Biological Threat
- ✓ LMTs also includes PIP scoring system for prioritization of capacity building activities.

**FAO LMT Safety Module (LMT-S)**

The purpose of this module is to aid laboratory assessment and determine strengths and gaps in laboratory biosafety. The Laboratory Mapping Tool (LMT) Safety Module (LMT-S) allows the generation of a laboratory profile or "map", and can be adapted to demonstrate safety status at the national, regional and global levels. It can also be used to establish a baseline for laboratory status (at the single laboratory, national or regional level) prior to an intervention; progress and impact can be measured against this baseline during and after the intervention.

The LMT-S is based on a standardized questionnaire that allows data to be captured either by external evaluators or through self-assessment. The tool is designed to facilitate the assessment in a systematic and semi-quantitative manner.

The LMT-S allows to assess four areas: 1/ Administration; 2/Operational; 3/ Engineering; 4/PPE. Within these four areas, 20 categories and 98 subcategories have been selected.



### Laboratory Mapping Tool (LMT-Core)

The purpose of this tool is to aid laboratory assessment and determine strengths and gaps in laboratory functionality. The tool allows the generation of a laboratory profile or "map", and can be adapted to demonstrate functionality and capacity (at the national, regional and global levels). It can also be used to establish a baseline for laboratory status (at the single laboratory, national or regional level) prior to an intervention; progress and impact can be measured against this baseline during and after the intervention.

The LMT-Core is based on a standardized questionnaire that allows data to be captured either by external evaluators or through self-assessment. The tool is designed to facilitate the assessment of laboratory functionality in a systematic and semi-quantitative manner.

The LMT-Core allows to assess five areas: 1/ general laboratory equipment and supplies; 2/ laboratory safety and biosafety/biosecurity; and 3/ laboratory accreditation and networking. Within these five categories, 108 subcategories have been selected.

**Outils FAO d'évaluation des laboratoires et systèmes de surveillance AMR : FAO-ATCLASS**

FAO-ATCLASS est structuré en deux modules, séparés chacun en 2 fichiers excel :

**A/ Module ATCLASS -Surveillance (différent fichier) :** divisé en 3 formulaires à remplir une seule fois par évaluation pour le pays tout entier.

2.1. Surveillance  
2.2. Usage-Résidu  
2.3. SET pour SAN

**B/ Module ATCLASS-laboratoire (fichier actuel) :** divisé en 2 formulaires, à compléter pour chaque laboratoire évalué, participant ou étant susceptible de participer au système de surveillance de l'AMR.

3.1. Formulaire Activité (questionnaire laboratoire)  
3.2. Formulaire de cartographie (LMT- module AMR)

**3.1 Questionnaire Laboratoire**

Ce formulaire est un questionnaire descriptif chargé de collecter des données sur l'activité du laboratoire, ses pratiques et ses compétences. Ce questionnaire permet d'investiguer 4 domaines : 1/ Activité; 2/Pratiques techniques; 3/Gestion des données et du matériel biologique; 4/Assurance Qualité. A l'intérieur de ces 4 domaines, 16 catégories et 70 sous-catégories ont été définies.

**4.3 Niveau PIP Laboratoire**

Un Niveau de Processus Progressif d'Amélioration (Progressive Improvement Pathway (score PIP)) est calculé, en comparant le score de chaque question avec le score requis pour chaque niveau spécifique dans la grille du PIP. Le score PIP pour un laboratoire correspond à celui où toutes les exigences sont remplies pour toutes les catégories de questions. Les exigences qui doivent être remplies pour le score suivant (automatiquement désignées par l'outil) sont ceux sur lesquels le laboratoire devra en priorité placer ses efforts pour améliorer ses

**3.2 et 3.3. Formulaire LMT module**

L'objectif de ce formulaire est d'aider à évaluer les forces et faiblesses du laboratoire pour la résistance bactérienne aux antibiotiques vétérinaires ou agricoles. Le module ATCLASS cartographie le laboratoire, et peut être complété en amont d'une intervention (à l'échelle nationale, régionale ou locale) ou établir un niveau de base (par niveau d'intervention) en amont d'une intervention (à l'échelle nationale, régionale ou locale) être mesurés, pendant et après.

Le module ATCLASS-LMT est basé sur un questionnaire qui capture les données à l'aide de l'évaluation. Cet outil est conçu pour être facile et semi-quantitatif.

Le LMT-AMR permet d'évaluer 4 domaines : 1) Gestion des données et du matériel biologique; 2) Sécurité; 3) Sécurité; 4) Sécurité. Les scores de 3 différentes évaluations A, B et C sont calculés. Les résultats du questionnaire et seront automatiquement synthétisés (voir 2.2).

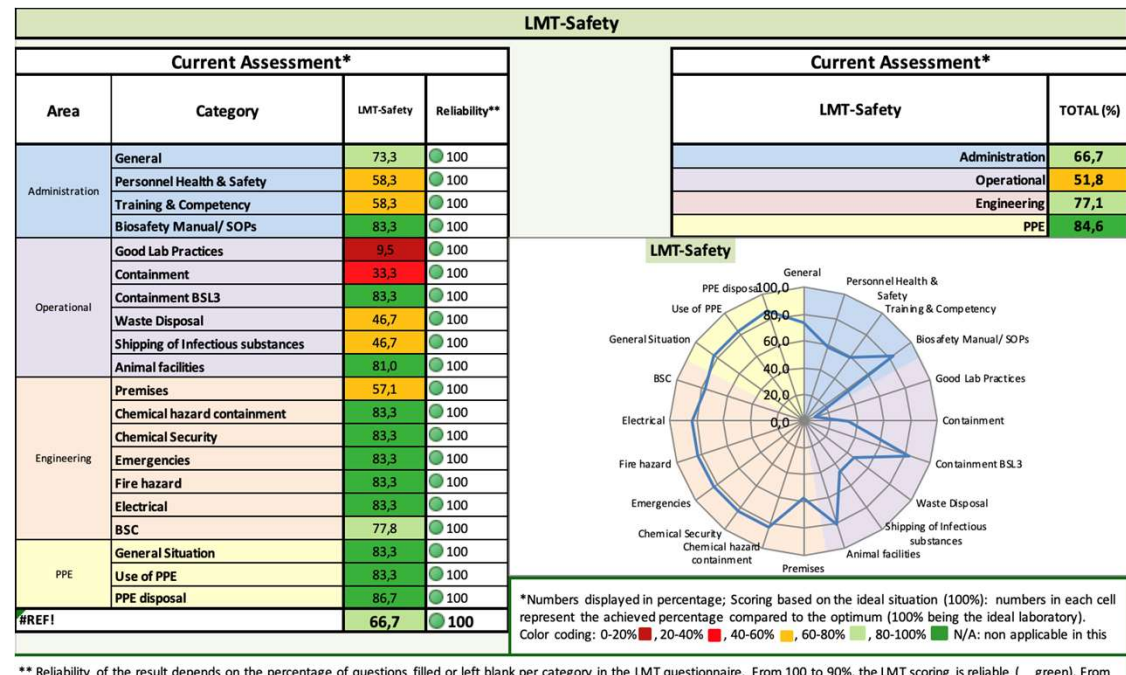
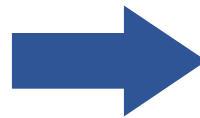
**4.2 LMT Résumé**

Les scores des 4 domaines, des 12 catégories et des 42 sous-catégories sont calculés et présentés dans un tableau. Une description narrative peut être ajoutée pour chaque sous-catégorie.



## The FAO-LMT safety

All LMT safety areas	LMT Safety Categories
Administration	General
	Personnel Health & Safety
	Training & Competency
	Biosafety Manual/ SOPs
Operational	Good Lab Practices
	Containment
	Containment BSL3
	Waste Disposal
	Shipping of Infectious substances
	Animal facilities
Engineering	Premises
	Chemical hazard containment
	Chemical Security
	Emergencies
	Fire hazard
	Electrical
	BSC
PPE	General Situation
	Use of PPE
	PPE disposal



Scores per categories and areas  
Highlights strengths and gaps

- ✓ Four Areas, 20 total categories, 98 sub categories





## After the assessment: National workshop



Follow-up discussions to assist laboratories and countries in developing an action plan based on the recommendations of the assessment:

- National meeting with the assessed laboratories and national stakeholders to develop action plans:
  - ✓ Plan next steps with each laboratory (based on recommendations)
  - ✓ National discussion on the main common issues among labs



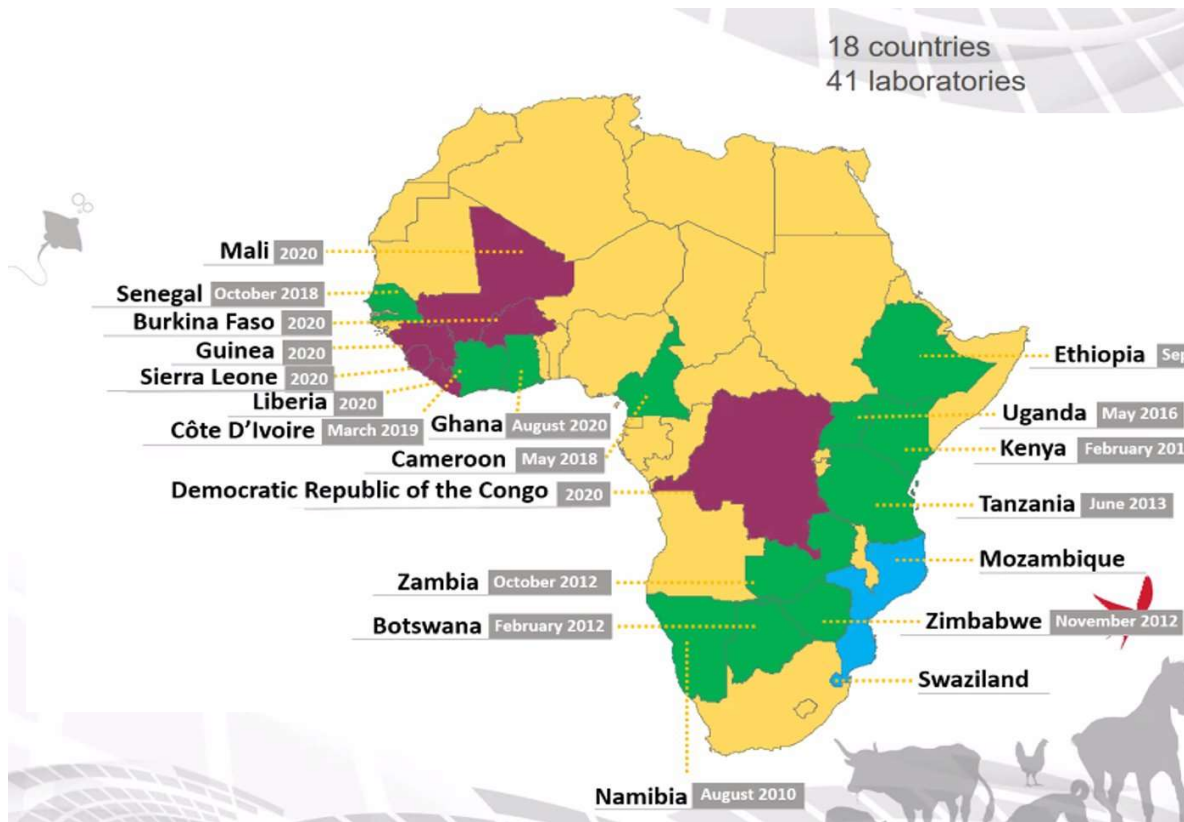
## REGIONAL PROGRAMS in WCA and ESA

- Since 2017 for WCA and 2019 for EE under RECs umbrella
- Annual workshops organized for each region (onsite)
- Training on risk assessment done in August 2022 for WCA BS/BS focal points
- Developed a Regional program for BS/BS
- Use the LTM safety assessment to measure their progress over the time, identify gaps and propose corrective actions
- Quarterly online meetings are organized to sharing experiences, main progressions, SOPs
- Maintenance and calibration of BSC - looking for a regional approach including training
- Infectious Substances shipment training organized every year (IATA)
- Inventory of highly infectious pathogens and development of a prioritization tool (under DTRA)
- Installation of SILAB (LIMS) which include a biobank module
- Trainings on diagnostic with BS/BS, PPE



# Quality Assurance and Biosafety/Biosecurity Regional Roadmaps





Countries in Asia also, more recent activities

Modular approach, adapted to each laboratory:

- Sample storage management (biobanking);
- Inventory/reagent management;
- Automatic invoice;
- Epi module (for information sharing with national Epi units);
- AMR Module for National Harmonized AMR Data Collection;
- OH module for managing human samples for zoonotic disease testing.



Food and Agriculture  
Organization of the  
United Nations



## Sampling manual to improve the safety and the quality of sampling activities

Adapted from a manual developed by a FAO Reference Centre

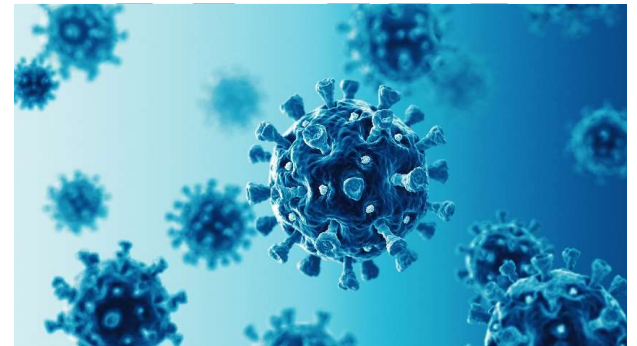
- Suit field condition
- Fast access to simple sampling instruction and recommendation
- Available in En and Fr
- Paper version and electronic version
- Friendly user application under development
- Pilot testing in the coming month





## FAO Ref Centers

- **Over 64 ref centers in over 27 countries supporting FAO programs.**
- **FAO reference centers are institutions such as national veterinary laboratories and agencies & research institutes, parts of universities or academies.**
- **Designated by the Director General to carry out activities in support to the Member Countries.**
- **Four-year term with possible re-designation.**
- **FAO corporate policy governs the designation of the Centers.**





# List of FAO Ref Centers

## TADs and Zoonotic Dis

1. ASF
2. Animal Influenza
3. Brucellosis
4. CBPP
5. CCPP
6. Classical Swine Fever
7. FMD
8. LSD
9. NCD
10. Parasitology
11. PPR
12. Rabies
13. Rinderpest
14. SGP
15. Tuberculosis
16. Vector borne diseases
17. Zoonotic Coronaviruses
18. Zoonosis and Emerging pathogens

**FAO-WOAH - FMD and Influenza**

## Technical Discipline

1. AMR
2. Animal Health and Food Security
3. Bioinformatics, risk modelling, risk management
4. Emerging pathogens and high biosecurity facilities
5. Laboratory Biological Risk Management
6. Vaccine quality control testing
7. Veterinary Epidemiology
8. Veterinary Public Health
9. Wildlife

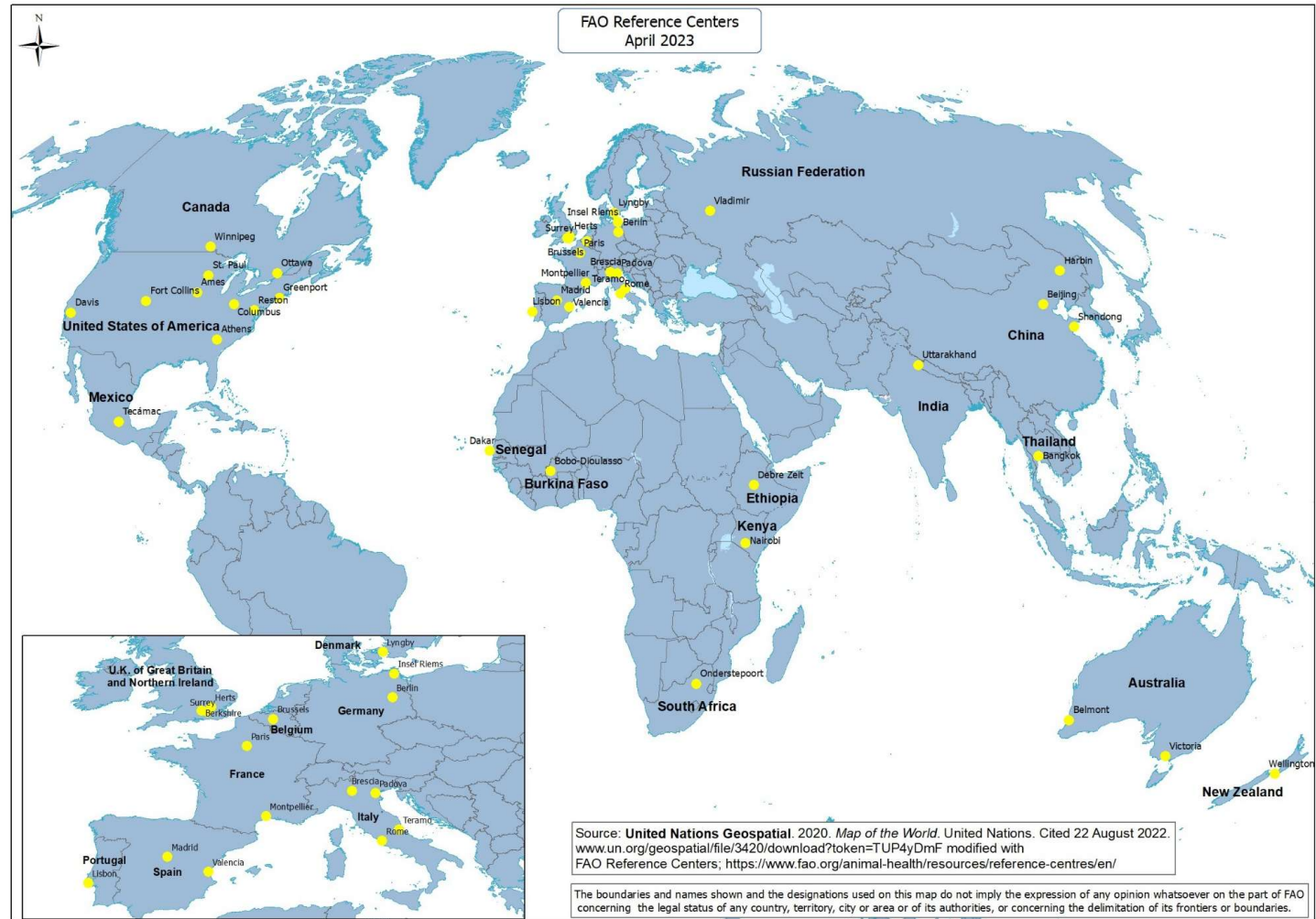
**Regional networks – disease specific  
(FMD, PPR, ASF)**



# Ref Centers Map

## Regional leading/support labs

- Five in Africa
- Two in WEA
- One in Middle East







Food and Agriculture  
Organization of the  
United Nations

SUSTAINABLE  
DEVELOPMENT  
GOALS



Food and Agriculture  
Organization of the  
United Nations

## Global consultation on highly pathogenic avian influenza (HPAI)

Rome, Italy  
2-4 May 2023

FAO ANIMAL PRODUCTION AND HEALTH / REPORT 20



Food and Agriculture  
Organization of the  
United Nations



SCIENTIFIC TASK FORCE ON  
AVIAN INFLUENZA AND WILD BIRDS

STATEMENT - JULY 2023



# 2023 HPAI expert consultation survey

Better understand research agenda  
 active role network Better website material and experttime manner  
 website user control **Better** meeting easy access  
 offlu website Update Greater expert expert position  
 prevention and control participants of this meeting Better sharing

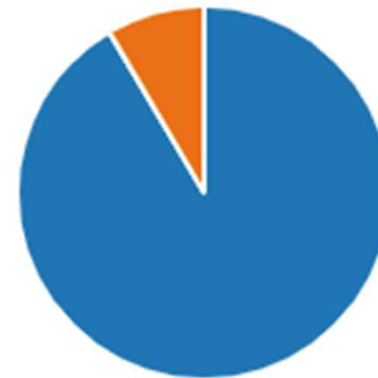


# 2023 HPAI expert consultation survey

33. How important do you think a functional international network of expertise on animal influenza is?

[More Details](#)

Extremely important	54
Somewhat important	5
Neutral	0
Somewhat not important	0
Extremely not important	0





Food and Agriculture  
Organization of the  
United Nations

SUSTAINABLE  
DEVELOPMENT  
GOALS

# 2023 HPAI expert consultation survey

How can OFFLU best serve you?

1. Provide information on current influenza situation in real-time
2. Provide a centralized information hub
3. Provide rapid access to expertise
4. Convene ad hoc groups on specific topics





Food and Agriculture  
Organization of the  
United Nations

SUSTAINABLE  
DEVELOPMENT  
GOALS



<https://forms.office.com/e/6kRTZ3ccst>



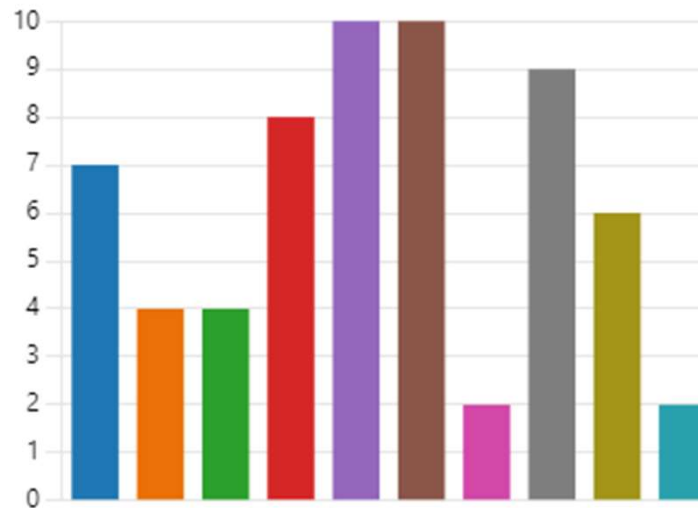


# OFFLU Survey for European Reference Laboratories Meeting

## 1. What are the biggest barriers for you to share data with OFFLU in real-time?

### Дополнительные сведения

- Nagoya protocol considerations 7
- OFFLU has no official mandate 4
- Publishing considerations 4
- Don't think about it 8
- Time pressure 10
- Don't know who to contact 10
- Worried OFFLU will not keep da... 2
- No mechanism in place 9
- Not my data to share 6
- Другое 2



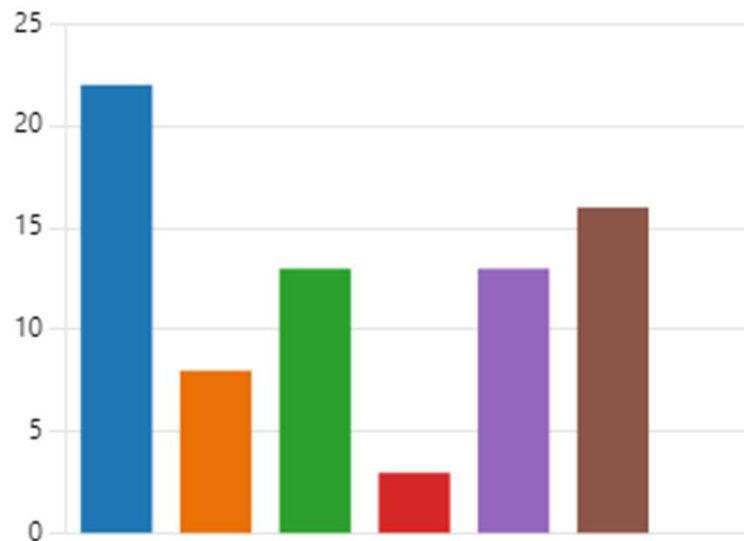


## OFFLU Survey for European Reference Laboratories Meeting

2. If there is a developing situation (e.g. emergence of a new subtype, or the risk of a new incursion in a previously free part of the world or into a new population), what OFFLU actions are most valuable to you?

### Дополнительные сведения

● Posting information on the web...	22
● Position statements	8
● Convening a webinar	13
● Convening an ad hoc group of e...	3
● Providing a platform for confide...	13
● Providing a place to contact the...	16
● Другое	0





## OFFLU Survey for European Reference Laboratories Meeting

### 3. How do you think new OFFLU experts should be selected?

#### Дополнительные сведения

- Open to all who consider thems... 5
- Referred by someone who is a c... 10
- Standardized application proced... 33
- Ad hoc appointment by WOA... 6







## OFFLU Survey for European Reference Laboratories Meeting

4. Any comments for OFFLU? (this survey is anonymous, constructive criticism welcome!)

expertise and knowledge      nice      update  
 map meeting      MS reps      AI cases      OFFLU      Unclear  
 None      health umbrella      grateful for the expertise



Food and Agriculture  
Organization of the  
United Nations

SUSTAINABLE  
DEVELOPMENT  
GOALS

# Thank you for attention!



Laboratory Team, HQ, WCA, EA, Asia  
*Food and Agriculture Organisation*