Sustainable Laboratories : PVS Targeted Support for Members for Data-driven advocacy

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8 July 2025

World Organisation for Animal Health | Organisation mondiale de la santé animale | Organización Mundial de Sanidad Animal

Regional Seminar for WOAH National Focal Poi
Laboratories: Africa Region

What is a sustainable laboratory network?

A system of laboratories that together continuously deliver specialised services in a manner which:

- Is efficient, timely, accurate, consistent, secure, and safe,
- Is in line with international standards and best practices,
- Is provided at an acceptable cost,
- Responds to clients' needs across sectors (public and/or private), and
- Benefits One Health goals and the overall One Health system.

This system is made up of specialised facilities where the combination of qualified staff, infrastructure, and scientific methods are used to convert financial, human, and material resources into durable outputs, such as reliable test results, health information for the public good, and valuable data.

Ad hoc Group on Sustainable Laboratories

A functioning and appropriately resourced laboratory contributes to **prosperity, stability and security at national, regional and global levels.**

A wide range of actors directly benefit fro well-managed a sustainably res laboratories.

What are the benefits of sustainable laboratories?

Improved biosecurity

by containing pathogens and preventing unauthorised access to reduce the risk of release that might threaten neighbouring human, animal or environmental health

Improved biosafety

by preventing exposure to biological materials

Higher quality of services

by ensuring confidence in laboratory test results to help take sound decisions to prevent disease spread and supporting the provision of accurate and timely data that responds to client demand

Preparedness

by learning from past events and planning responses during "peacetime"

Ensured business continuity

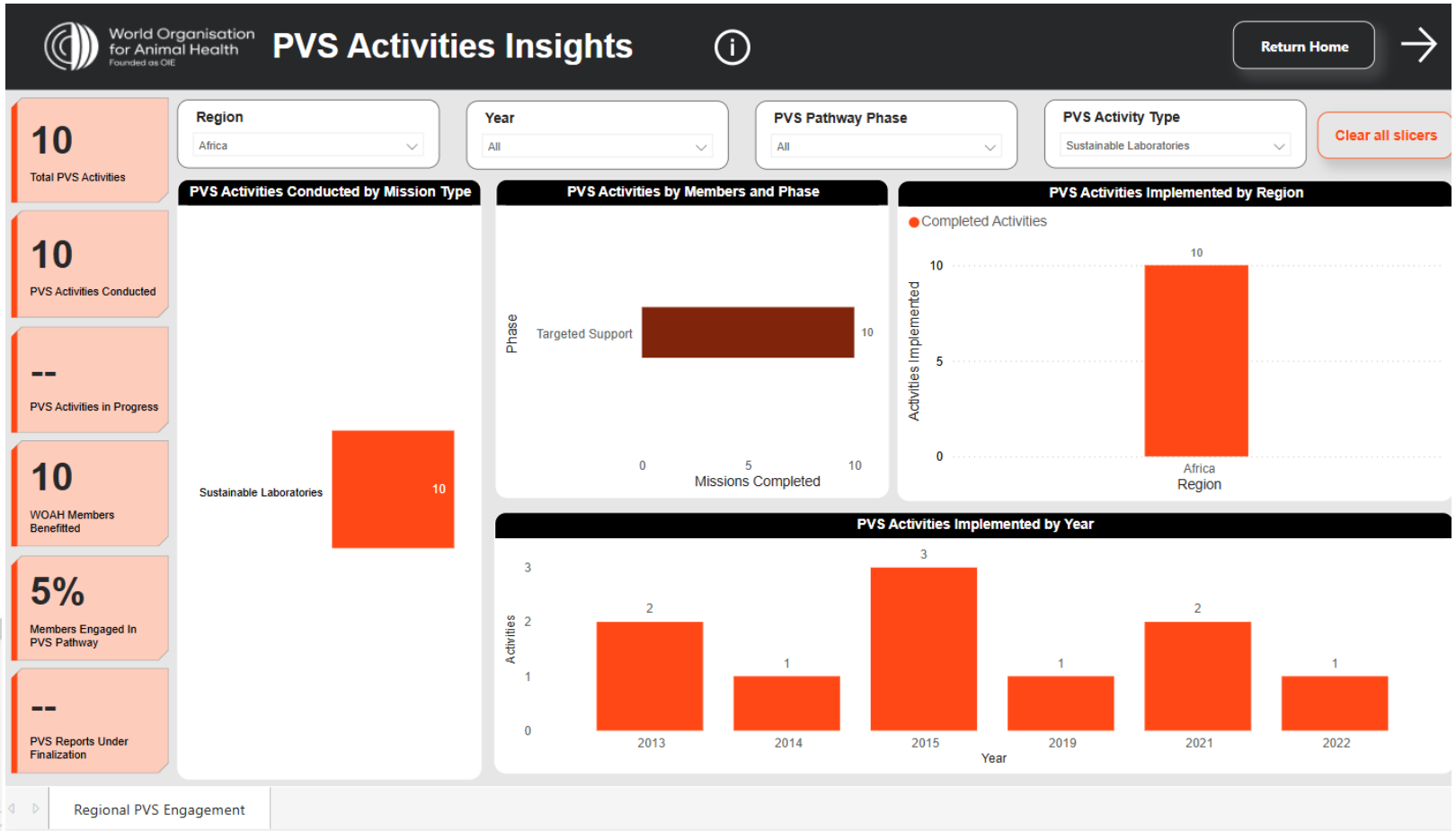
by managing resources and expertise ahead of potential emergencies

WOAH's Action

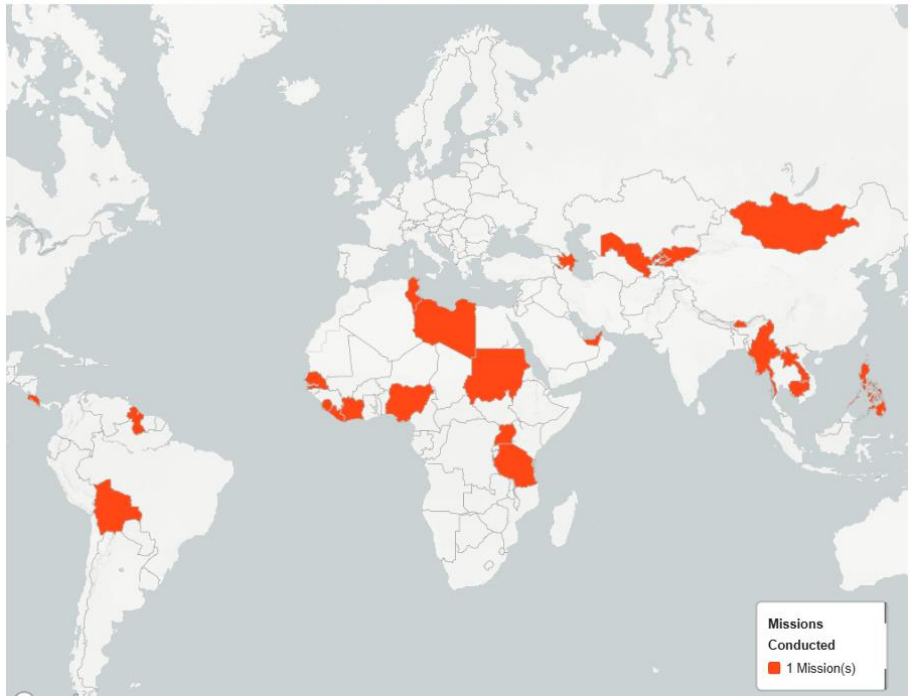
WOAH envisions a world where laboratories ensure that Veterinary Services have access to quality diagnosis through a sustainable network of laboratories, capable of accurately identifying and reporting infections and other hazards.

- **Through its Sustainable Laboratories Targeted Sup**
  WOAH plays a critical role in the data-gathering p
  analyse and make recommendations on sustaina

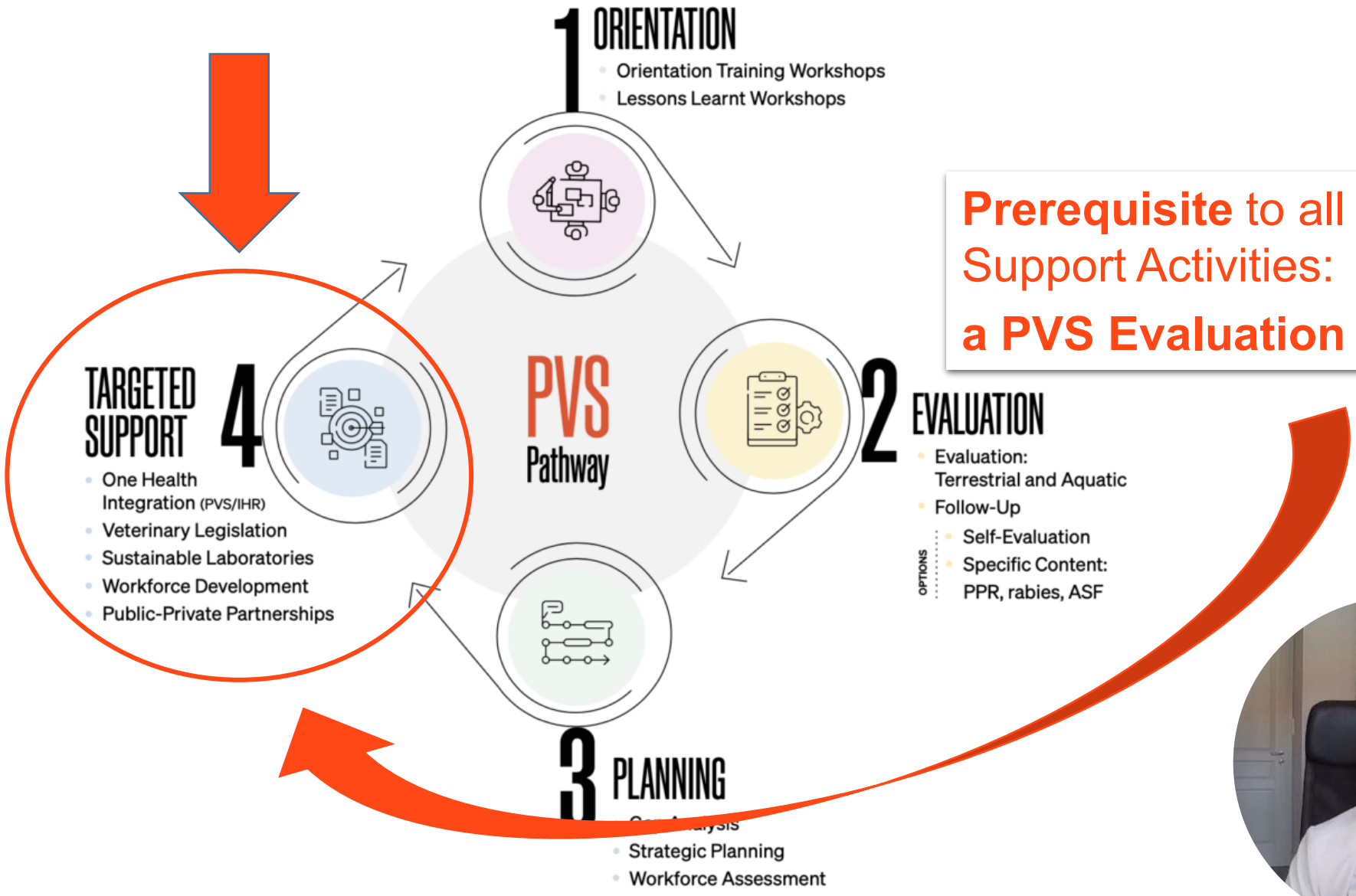
Global and Regional State of Play for PVS Sustainable Laboratories missions



Targeted Support for building capacity of the Veterinary Services - Sustainable Laboratories



- 23 missions implemented globally



Prerequisite to all Targeted Support Activities:

a PVS Evaluation

Overview of PVS Sustainable Laboratories Mission (different modalities available)

Phase 1 -Pre-mission

- **Purpose**
  - Data collection
- **Participants**
  - Expert Team
  - Country Team
  - WOAH Team
- **Format**
  - Virtual webinars

Phase 2- Mission

- **Purpose**
  - Validate data collected
  - Conduct interviews
  - Formulate options
- **Participants**
  - Expert Team
  - Country Team
  - WOAH Team
  - Stakeholders
- **Format**
  - Can be virtual, face to face or a combination

Phase 3- Post Mission

- **Purpose**
  - Output development: report, data entry tool, visualisations
- **Participants**
  - Expert Team
  - WOAH Team
- **Format**
  - Virtual webinars

Outputs for Country Veterinary Services

PVS Sustainable Laboratories Report

- ✓ Comprehensive & documented current lab activities
- ✓ Estimated demand for lab services over next 5 years
- ✓ Potential new activities over next 5 years
- ✓ Estimated total current cost of lab services
- ✓ Strategic, management & organisational options for optimized national lab network
- ✓ Estimated human, physical & financial resources for each option
- ✓ Specific actions & general recommendations to target sustainability at different levels of influence
- ✓ Detailed visualisations and arguments for advocacy

- Available in your seminar documents!

Laboratory Equipment Management and Sustainability

Next page

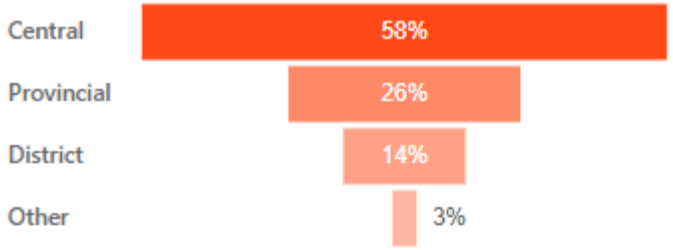
68,455
Pieces of laboratory equipment reported

Equipment reported, by network level

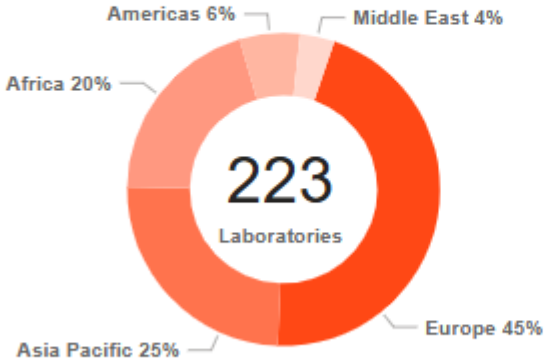
- Central **77.12%**
- Provincial **17.23%**
- District **4.44%**
- Other **1.21%**

€ 264.4M
Estimated value of laboratory equipment reported

Participating laboratories, by laboratory network level



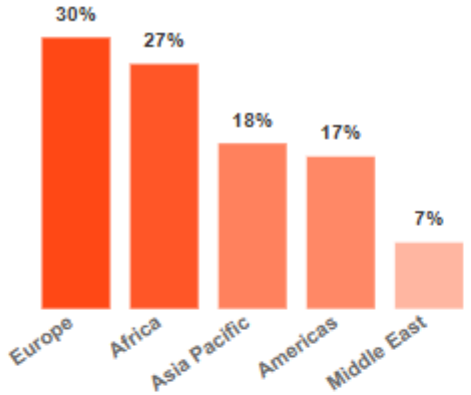
Participating laboratories, by Region



93%
of respondents work in a laboratory

136
participating Members

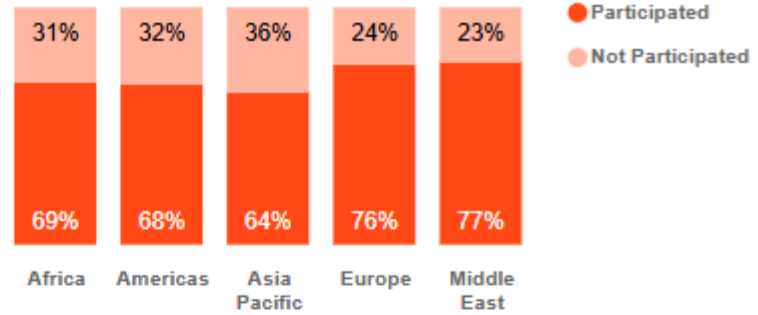
Participating Members, by Region



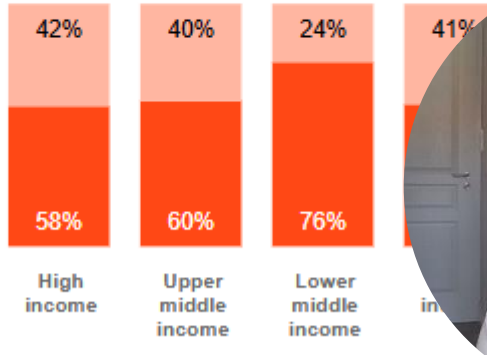
75%
of Members participated

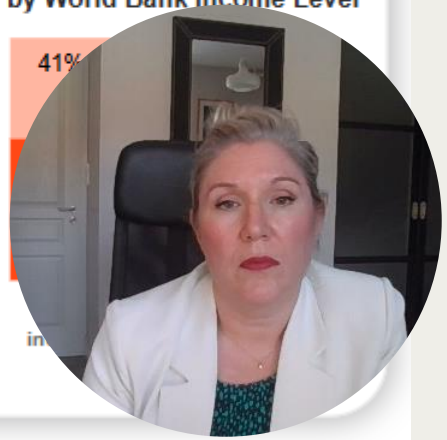
182
Members

Proportion of participating Members, by Region



Proportion of participating Members, by World Bank Income Level





Results

- Africa
- Americas
- Asia Pacific
- Europe
- Middle East

Laboratory Equipment Maintenance and Calibration

Exclude Pipettes

22% of all equipment reported was not properly maintained and 46% was not properly calibrated, observed across 40 different types of laboratory equipment.

Proper calibration was systematically observed as more problematic compared to proper maintenance. Important variations across regions, income levels, and preparation were observed.

68,455

pieces of laboratory equipment reported

More info

46%

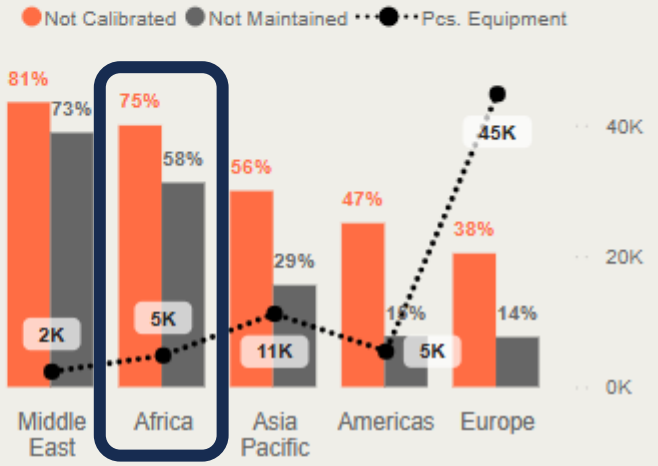
is not properly calibrated

More info

22%

is not properly maintained

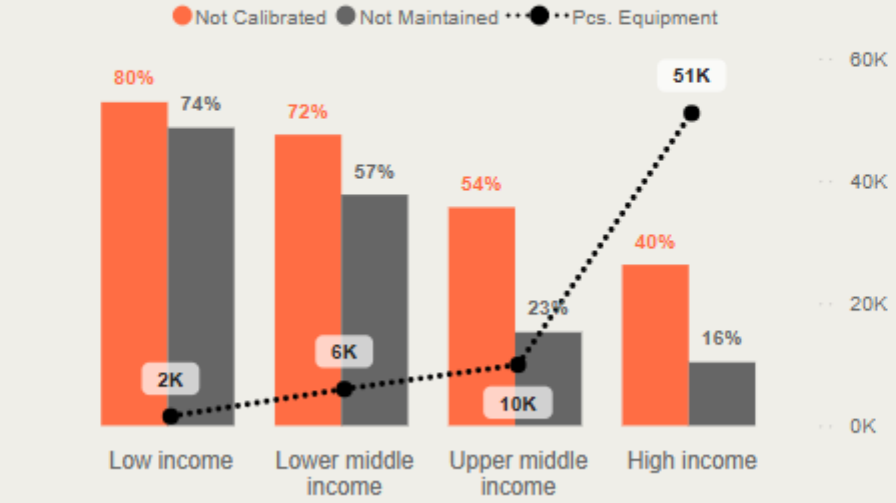
% of equipment not calibrated, maintained, and number of equipment reported, by Region



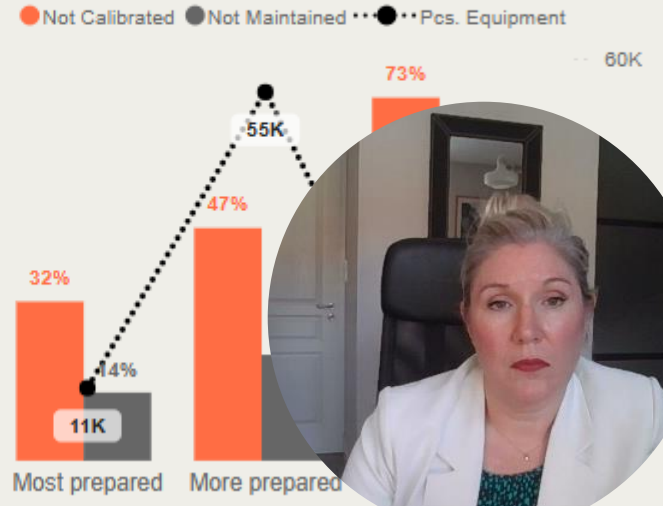
Despite having the smallest amount of laboratory equipment, the lowest resource members and least prepared members had the most difficulty to maintain and calibrate the equipment they have.

This phenomenon becomes more challenging as the technical complexity of equipment increases.

% of equipment not calibrated, maintained, and number of equipment reported, by World Bank Income Level



% of equipment not calibrated, maintained, and number of equipment reported, by Global Health Security Index



Results

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- Americas
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Malfunctioning Laboratory Equipment

Exclude Pipettes

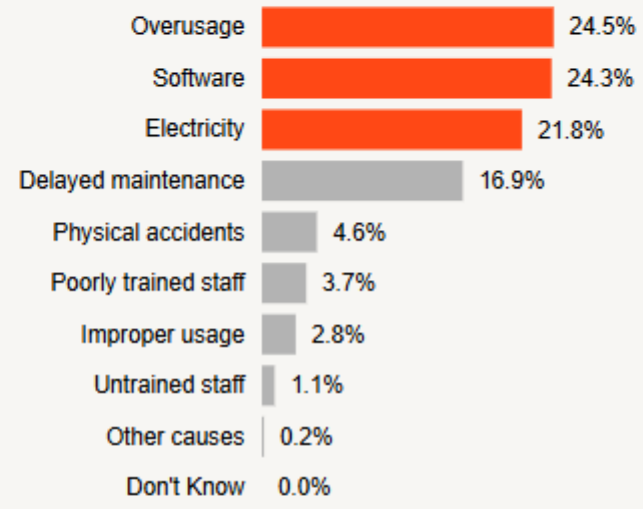
Overall, 11% of equipment reported was out of service, and the figure nearly doubled for the least prepared Members.

Similarly, 26% of equipment reported in low-income countries was out of service.

Due to the large number of mono- and multi-channel pipettes reported, when pipettes are excluded, the global out-of-service rate increased to 14%, showing again that pipettes positively bias the sample results.

Important variations across regions, income levels, and preparation were observed.

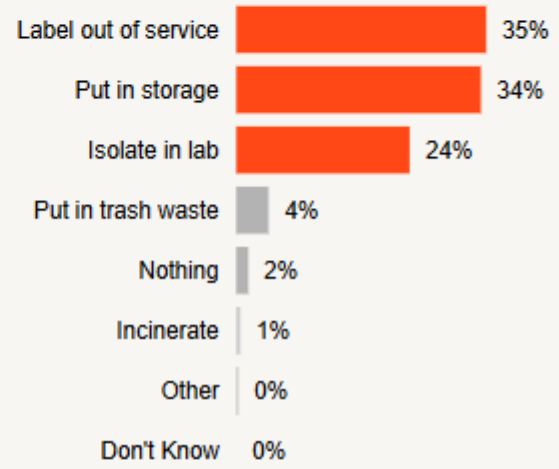
Percentage by Top 3 Causes of malfunctioning



11%
of equipment is out of service

68,455
pieces of equipment reported

Treatment of obsolete, damaged, or outdated equipment

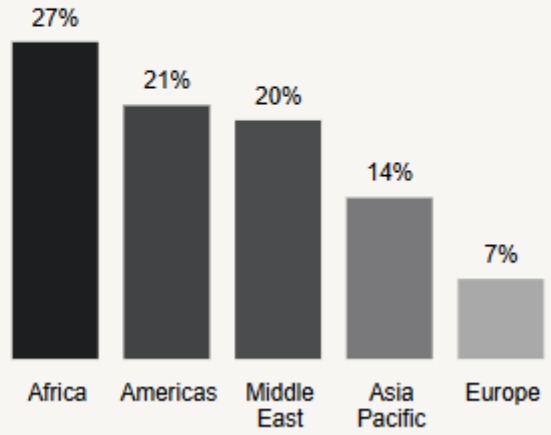


In the event of equipment malfunction, repair may not be locally available, and the equipment become unusable or useless.

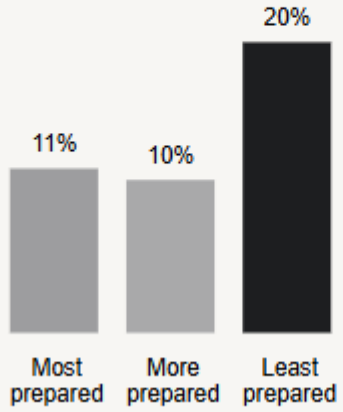
As malfunctioning equipment goes unrepaired, it contributes to electronic waste, or "e-waste", a problem for human, animal, and environmental health, reaching 2.9 million tonnes in 2019 in the Africa Region alone.

Laboratory e-waste may be contaminated with dangerous and infectious pathogens, thus adding another troubling layer of safety and security concerns to the e-waste problem.

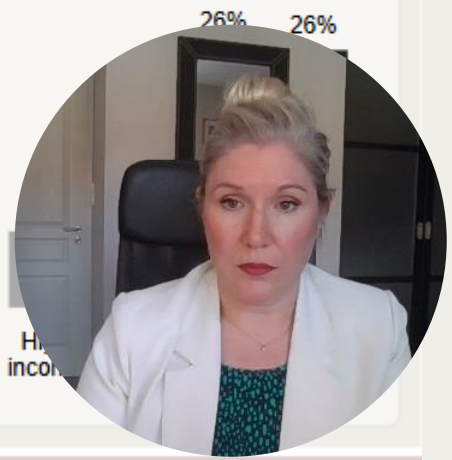
% of out of service equipment, by Region



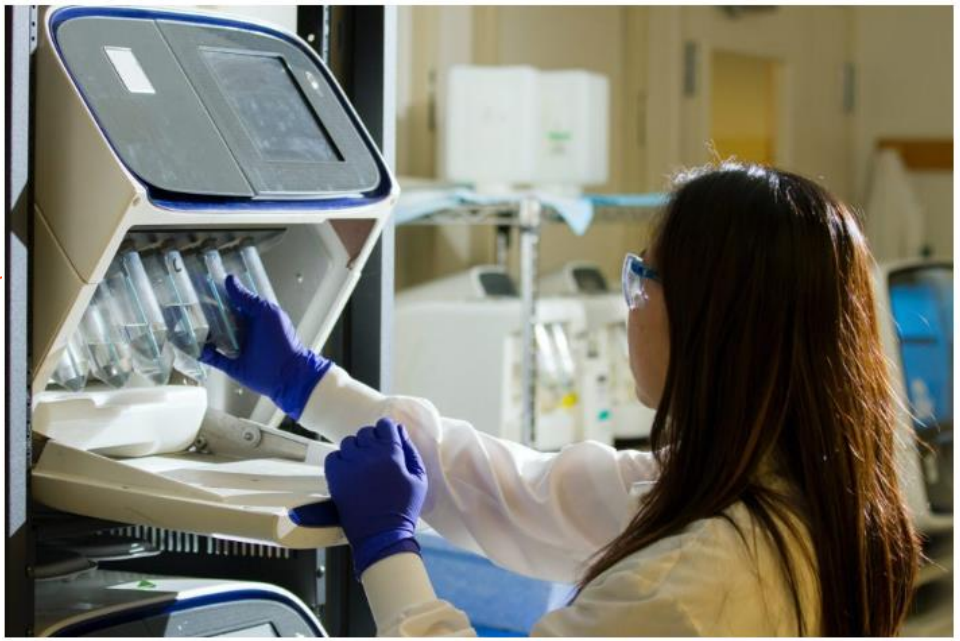
% of out of service equipment, by Global Health Security Index



% of out of service equipment, by World Bank Income Level



https://www.woah.org/en/what-we-offer/emergency-preparedness/sustainable-laboratories/pvs-sustainable-laboratory-cohort-analysis/



PVS Sustainable Laboratory Cohort Analysis

Back

Overall Laboratory Diagnostic Capacity

27M
Tests conducted

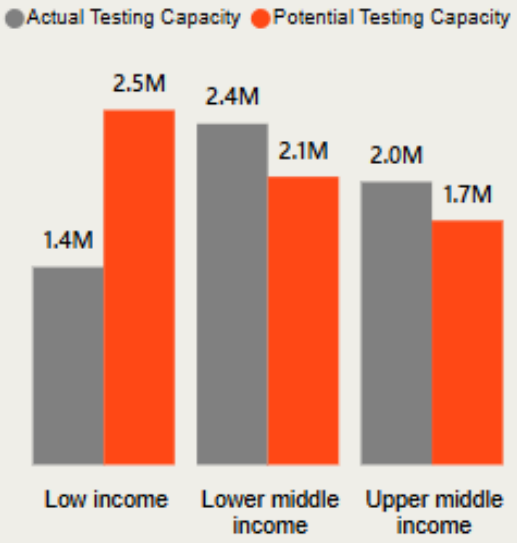
On average, currently testing at

51%
of potential testing capacity, HR

On average, currently testing at

30%
of potential testing capacity, equipment

Estimated Potential vs Actual testing capacity, HR, by WB Income Level



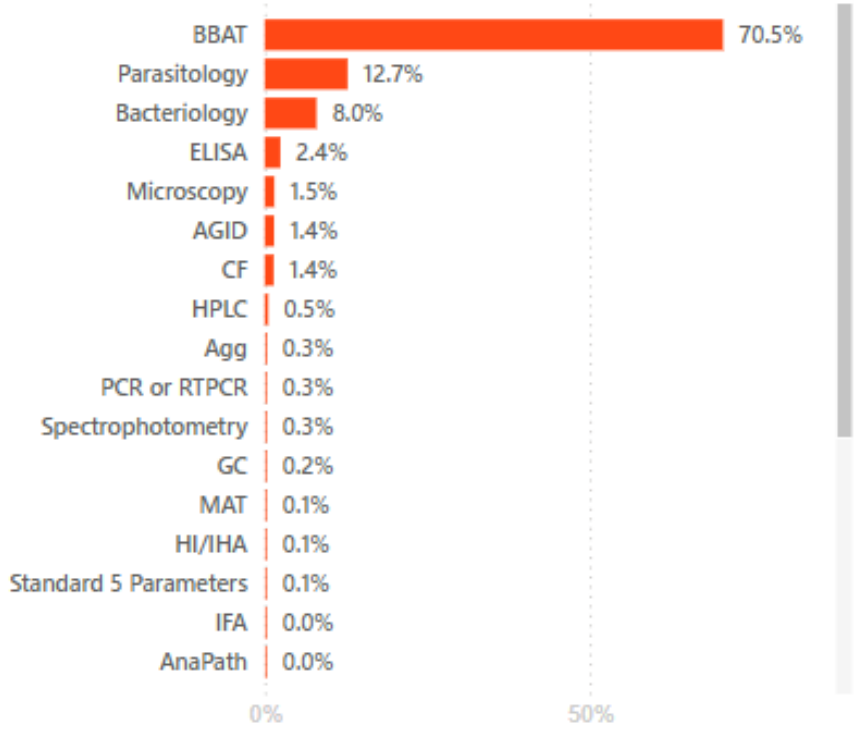
18%
of tests not performed

10,758
Tests conducted annually, per technical staff

70%
of labs do routine sampling

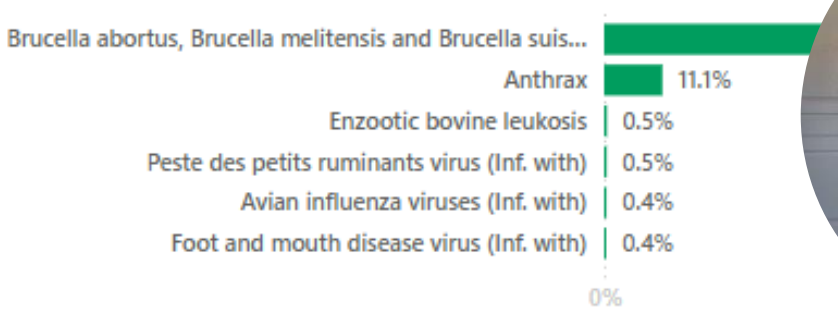
Tests reported, by method category

27
Methods reported



59
Diseases reported

Tests reported, by WOAH listed Diseases

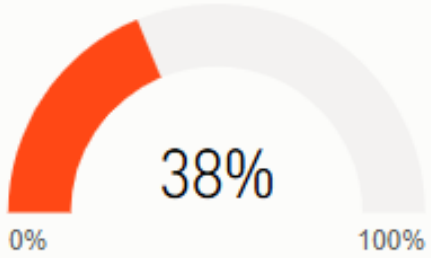


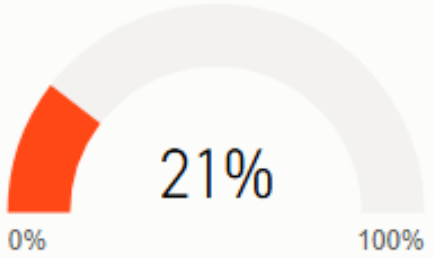
While capacity building efforts may have improved bench-top capacity in laboratories, it is unsustainable: it is underused, unleveraged, and inefficient, leading to waste

Despite large and extended external investment in the field and the laboratory, countries are only using a fraction of their potential capacity

Back

Laboratory Clients and Revenue

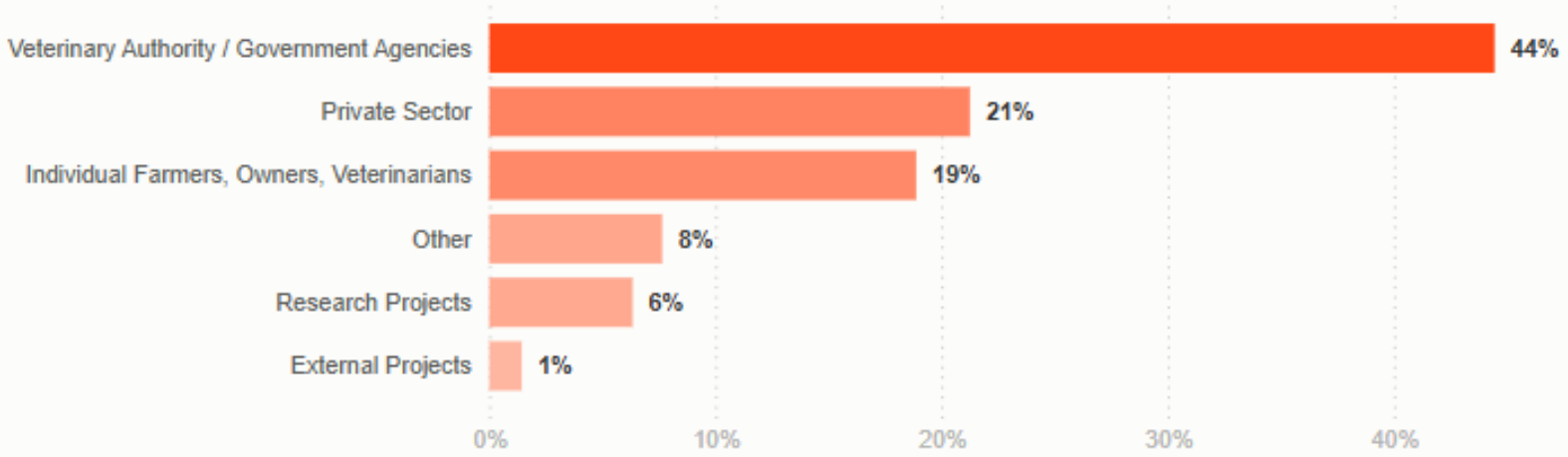




13%
can use revenue directly

40%
have cost accounting systems

Proportion of samples submitted, by client type



Many laboratories are prohibited from charging a fee for service by existing legislation due to their "public good" status, or lack legal frameworks to do so, and fight perceptions that public good services should not generate revenue or "profit".

These constraints cripple sustainability efforts by depriving the laboratory network of precious sources of sustainable income and opportunities to provide revenue-generating services to clients who are able to pay for a quality service.

While capacity building efforts may have improved bench-top capacity in laboratories, it is unsustainable: it is underused, unleveraged, and inefficient, leading to waste

GLLP Vision and Mission

Vision:

Laboratory leaders empowering national laboratory systems across the globe using a One Health approach to strengthen health security.

Mission:

To provide laboratory professionals with the tools to develop their laboratory leadership competencies and advance effective national laboratory syst improved health securi a One Health appro

GLLP Global Laboratory Leadership Programme

A health initiative by FAO, WHO, WOAH, ECDC, CDC, APHL

GLLP: Products

Laboratory Leadership Competency Framework
https://www.who.int/publications/i/item/9789241515108

GLLP Learning Package
https://extranet.who.int/hslp/gllp

Communication products
https://www.who.int/initiatives/global-laboratory-leadership-pro

GLLP Global Laboratory Leadership Programme
A health initiative by FAO, WHO, WOAH, ECDC, CDC, APHL

WOAH eLearning Platform: training.woah.org

eLearning Modules for Laboratories under development!

Laboratory Role in Outbreak Investigation

Principles of Surveillance for Laboratory Leaders

Wide Catalogue: 40 eModules under 16 Competency Packages (CP)

Lifelong learning: 3 levels of expertise (Day 1, Day 2 and Expert) on an open source

Available Online

Competency Package	Emodule	Level
CP02 - Quality and management of Veterinary Services/AAHS	Leadership Essentials for Veterinary Services	Day 2
	Leadership in Veterinary Services: intermediate level module	Day 2
	Leadership in Veterinary Services: advanced level module	Expert
	Leadership of Chief Veterinary Officers and WOAH Delegates for stronger VS	Expert
CP05 - Animal health management	Outbreak investigation and response management –Field Veterinarians	Expert
	Outbreak investigation and response management - Veterinarians paraprofessional	Expert
	African Swine Fever	Expert
CP06 - Emergency management	Introduction to emergency and disaster management	Day 2
CP07 - Animal welfare	Reptile animal welfare	Expert
CP08 - Prudent use of antimicrobials and other veterinary products	AMR General Introduction	Day 1
	Stewardships on AMR under One Health approach	Day 1
	Stewardships on AMR in terrestrial animals	Day 2
	Stewardships on AMR in aquatic animals	Day 2
	Building a national AMR Action Plan (NAP)	
CP10 - Partnership	Public-Private Partnerships in the Veterinary Domain: An Introductory Cou	
CP12 - Trade of animals and animal products	International trade regulatory framework: an overview	
CP16 - Wildlife	Wildlife Surveillance	
	Wildlife Surveillance	

Coming SOON!

Competency Package	Emodule	
CP05 - Animal health management	Outbreak investigation and response management – Veterinarians in C[illegible] Government	Expert
CP06 - Emergency management	Planning for emergencies and disasters	Day 2
	Planning for emergencies and disasters	Expert
	Emergency and disaster response	Day 2
CP07- Animal Welfare	Welfare of animals during slaughter	Day 2
	Animal welfare and pig production systems (TACH Chapter 7.13)	Day 1
	Killing of animals for disease control purposes (TACH Chapter 7.6)	Day 1
	Implementing Dog population Management (ICAM)	Day 1
	Dog population Management for Policy Makers (ICAM)	Expert
CP12 - Trade of animals and animal products	Principles of animal health status and regionalisation	Day 1
	Definition and demonstration of disease freedom (country, zone, compartment)	Day 2
	Selection and implementation of sanitary measures to be applied at export and import	Expert
	Import risk analysis: general principles	Day 1
	Hazard identification at import	Day 2
	Risk assessment for a safer trade	Day 2
	Risk management at import	Day 2
	Import health measures: the development steps	[illegible]
	The role of VS in import and export of animals and animal products: basic principles	
	The role of VS in import and export of animals and animal products: advanced principles	
CP 15- Aquatics	Aquatics Surveillance	
	Aquatics Disease prevention/Control	
CP16 - Wildlife	Wildlife Trade	
	Wildlife Trade	

Thank you

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