

STRENGTHENING VETERINARY DIAGNOSTIC CAPACITIES: THE **FAO LABORATORY MAPPING TOOL**



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LABORATORY MAPPING TOOL (LMT) *features*

LMT IS A STANDARDIZED TOOL TO ASSESS THE FUNCTIONALITY OF VETERINARY LABORATORIES AND IMPROVE THEIR STANDARDS

LMT MAY BE USED BY ANY VETERINARY LABORATORY IN ANY REGION OR BY ANY DEVELOPMENT PARTNERS WORKING ON VETERINARY LABORATORY CAPACITY BUILDING

THE CORE LMT WAS RELEASED PUBLICLY IN MAY 2014

The **ABILITY** of **DIAGNOSTIC LABORATORIES** to detect and characterize infectious agents, and therefore to support the prevention and management of health threats, is frequently constrained by lack of skilled personnel, accurate and consistent laboratory methods and quick data exchange systems.

Deficiencies in the capacities and capabilities of laboratories may lead to inadequate responses to disease emergencies at the animal-human interface.

To address these gaps, FAO, in 2010, developed the Laboratory Mapping Tool (LMT) to aid laboratory assessment, and in particular to assess the functionality and capacities of veterinary laboratories.

The semi-quantitative assessment of laboratory functionality and capacities is conducted via a detailed and standardized questionnaire which can be applied by an external assessor or via self-assessment. A laboratory profile or "map" will be generated by the tool based on automatic calculations of the determined scores.

LMT AND ITS MODULES

The LMT was originally developed in the context of the five -year [IDENTIFY project](#), aimed at strengthening laboratory capacity for early detection and diagnosis of diseases, enabling rapid response to emerging issues, part of the USAID-funded Emerging Pandemic Threat (EPT) Program. It has been applied yearly in more than 30 countries. With the new EPT-2 program, it will be applied also yearly in all EPT-2 supported laboratories.

The [core LMT](#) assesses five areas of the laboratory: i) general profile; ii) infrastructure, equipment and supplies; iii) performance; iv) quality assurance, biosafety and biosecurity; and v) collaboration and networking. Within these five areas, 17 categories and 108 subcategories (four scores to each subcategory) have been defined.

This profile of laboratory functionality can be monitored over time, for

instance on a yearly basis. An improved version of the tool has been produced thanks to users' feedback and application in many laboratories. The tool has been made public in 2014 and may be used by any veterinary laboratory in any region or by any development partners working on veterinary laboratory capacity building, to assess a given laboratory functionality and identify priorities and gaps.

Other modules of the LMT are currently being developed to assess more specifically some specific areas, such as the laboratory safety, capacity for testing for anti-microbial resistance (AMR) and testing for specific diseases.

The [safety module](#) will soon be finalized and released to the public after being piloted in six African laboratories and nine Asian laboratories.

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LABORATORY MAPPING TOOL (LMT) features

THE CORE LMT HAS BEEN ALREADY APPLIED FOR SEVERAL CONSECUTIVE YEARS IN MORE THAN 30 COUNTRIES

LMT MODULES ARE BEING DEVELOPED. FIRST MODULE TO BE AVAILABLE: THE LMT-SAFETY MODULE

A FREE MOBILE APPLICATION OF THE LMT WILL BE AVAILABLE IN PLAY STORE AND APPLE STORE (MULTI-PLATFORM ANDROID PHONES AND TABLETS FIRST AND APPLE IOS IN A SECOND STEP)

A PLATFORM FOR LMT DATA RECORDING AND MANAGEMENT IS AVAILABLE

FAO/ EMPRES Animal Health

E-mail: Food-Chain-Crisis@fao.org
EMPRES-Lab-Unit@fao.org
 Website:
www.fao.org/food-chain-crisis
<http://www.fao.org/ag/againfo/programmes/en/empres/home.asp>

It includes almost 100 subcategories, 20 categories and four areas: administration, operational aspects, engineering, Personal Protective Equipment.

It is referenced in the latest version of the World Organisation for Animal Health manual, biosafety chapter.

The LMT and its modules can be applied as simple Excel files or using a mobile application. They are available in English and French and other languages upon request. When shared with FAO by the assessors, LMT data are recorded and can be compiled on a recently developed platform that allows for further statistical analysis by FAO.

National portals for management of LMT data for the whole national veterinary laboratory system will be shortly available. Through such portal, laboratories or countries will also be able to compare their status on an anonymous basis with others at national, regional and global levels.



The first national inception workshop and training on the use of the core LMT and its safety module took place in Thailand in February 2016 with participation from the national network of Thai veterinary laboratories (ten

regional laboratories as well as the National Institute of Animal Health and the foot-and-mouth disease regional reference laboratory).

The core LMT and the biological safety module have been translated into Thai language.

During the training, participants have been introduced to the tool and two staff from each laboratory have been invited to apply it in real laboratory facilities and compare their results. Each participant will then be able to independently self-assess their own laboratory.

Other trainings will be organized in other countries or regions upon need and request.

The LMT can be a pertinent tool in evidencing and understanding where diagnostic laboratory gaps are and emphasizing capacity building needs. It can assist to develop strategic plans that will match with individual, national and regional laboratory needs.

The tool also serves to establish a baseline for laboratory status prior to intervention, allowing for an accurate measurement of progress and impact post-intervention.

This tool has already shown to be useful to countries and regions as well as their technical and financial partners by measuring evolution of the laboratory profile and by monitoring national and regional laboratory capacities for identification of priorities for intervention.