



**Starting Period: May 2019**

## **Strengthening AMR/AMU Surveillance in the Animal Health Sector of the Lao People's Democratic Republic**

**OSRO/LAO/902/OPS**

**Ending Period: June 2023**

### **AMR Phenomenon and its Causes**

Antimicrobial resistance (AMR) is a major global threat with an increasing concern to human and animal health. It also has implications for both food safety, food security and the economic well-being of farming households.

Antimicrobial resistance (AMR) results from unregulated overuse and misuse of antimicrobials in humans, and in the production of terrestrial and aquatic animals. Specifically, many antimicrobials are used in the production animal industry for the purpose of either disease control or as growth promoter. This has resulted in the development of resistance and exchange of resistance genes of the bacteria.

In addition, weak or non-existent regulatory frameworks governing antimicrobial use, sub-optimal enforcement and compliance of existing guidelines, low levels of AMR awareness, and inadequate commitment for antimicrobial stewardship are driving factors for the development of AMR.

### **Achievements through the Fleming Fund Financial Support**

Through the Fleming Fund's financial support, the Food and Agriculture Organization of the United Nations (FAO) has helped Lao People's Democratic Republic to overcome the antimicrobial resistance (AMR) and antimicrobial use (AMU) with a wide range of achievements and outcomes.



# Key Achievements

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## Two key national symposia on AMR and AMU delivered



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The Emergency Centre for Transboundary Animal Diseases (ECTAD) at FAO in Lao People's Democratic Republic has contributed to establishing strong partnerships among different key stakeholders and developed networks to improve cooperation and communication, to ensure efficient networking and information exchange.

## Multi-sector sharing and comparison of AMR and AMU surveillance information conducted regularly within ASCC

FAO ECTAD in Lao People's Democratic Republic has played a leading role in coordination and development of the National Strategic plan (NSP) and the National Action Plan (NAP) and highlighted the multi-sectoral commitment to tackling the issue of antimicrobial resistance in Lao People's Democratic Republic. FAO has been working closely in collaboration with the Department of Livestock and Fisheries (DLF) to establish the National Antimicrobial resistance Control Committee (NASCC) to oversee and provide guidance the implementation of the activities relate to the AMR/AMU surveillance in the country.

## Assessment of NAHL capacity needs and gaps completed

FAO ECTAD and Chulalongkorn University Veterinary (CU VET) have worked in close collaboration to reinforce national AMR action plans associated with food animals and their products, by building and strengthening national AMR laboratories in countries in Asia and Pacific. While continuously developing AMR laboratory capacities and enhancing AMR surveillance, FAO has developed the "Assessment Tool for Laboratories and AMR Surveillance Systems" (FAO-ATLASS) to support food and agriculture sectors of countries in assessing their surveillance system related to AMR developed by UNOPS and FAO.



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## Reliable quality bacterial culture, identification and antibiotic sensitivity results for salmonella spp. and Escherichia coli. generated

FAO ECTAD in Lao People's Democratic Republic provided technical support and procured facilities to support the surveillance of antimicrobial resistance (AMR) in animals. Training on bacterial isolation and identification and antibiotic sensitivity test were provided by Chulalongkorn University Veterinary AMR Cluster (CU VET AMR), with necessary materials such as consumables, reagents and equipment to support bacterial culture and identification. Surveillance of AMR has been conducted in five provinces



regularly, with the development of AMR surveillance program, assessment and building of laboratory capacities, country situational analysis, development of guideline for AMR monitoring, proficiency testing for antimicrobial susceptibility testing and related training.

## Biosafety and biosecurity in NAHL improvements made



NAHL is the only laboratory with bacteriology division and AMR capacity in Lao People's Democratic Republic. To ensure the AMR laboratory capacity in AMR monitoring-laboratory network is strengthened, FAO worked closely with DLF to develop laboratory capacity for AMR testing and monitoring in food animals and related products, especially in NAHL.

## Good quality samples from the agreed livestock species are regularly sent to the NAHL from selected provinces for culture and AST

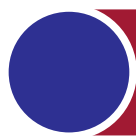
Through a collaborative effort between FAO ECTAD in Lao People's Democratic Republic, National Animal Health Laboratory (NAHL) and Provincial Animal Health Laboratory (PAHL), the training on sample collection, packaging and transport for antimicrobial resistance have been conducted in five provinces. The training aimed to strengthen knowledge and skills for sample collection and handling for bacterial isolation in AMR monitoring and support national AMR surveillance in food animals in Lao People's Democratic Republic.

## An up-to-date and accurate database of the demographic details are maintained using WHONET or similar appropriate software

FAO ECTAD in Lao People's Democratic Republic adhered and supported the NAHL to conduct "The WHONET training course", in close collaboration with the National Centre for Laboratory and Epidemiology (NCLE) of the Ministry of Health and the World Health Organization (WHO).

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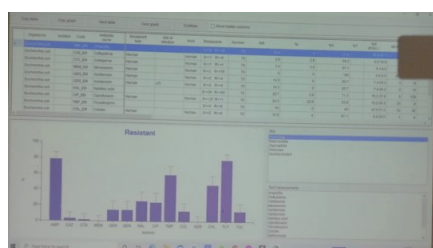


## National biorepository of all isolates generated through AMR surveillance is securely and accurately inventoried

FAO ECTAD in Lao People's Democratic Republic provided -80°C freezer to keep the isolates and supported with UPS to secure the seep freezer running smoothly in case of electrical outage. A new -80°C freezer is using for only bacterial isolates. All isolates generated through the AMR surveillance programme are stored in -80 °C freezer using an appropriate storage method to ensure the retainment of viable cells.



## Epidemiology analysis of the AMR data was conducted and reported regularly to DLF and the technical and general subcommittees of the ASCC



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The epidemiology unit in DLF, consisting of TWO staffs, attended the training on “the application of the WHONET programme for the AMR surveillance data management”, and later the “WHONET training course” to analyze and interpret the AMR surveillance data in animal sector in Lao People's Democratic Republic, which was then shared with NAHL, DLF and National Antimicrobial Resistance Surveillance and Control Committee (NASCC). This support was very useful to support quarterly meetings with all contributors to AMR/AMU surveillance in DLF to share and discuss results and issues.



## Strategy developed to strengthen three provincial animal health labs for AMR surveillance

The Assessment Tool for Laboratory and AMR Surveillance System (ATLASS) was conducted in 4 laboratory in NAHL, PAHL in Luang Prabang, Champasack and Savannakhet provinces to assess the gaps and proved an overall picture of labs network and capacities in Lao PDR. As a result, FAO ECTAD in Lao People's Democratic Republic provided training course and all necessary laboratory equipment and reagents to provincial animal health laboratory. All of this led to build capacities of PAHL staffs in three provinces (PAHL in Luang Prabang, Champasack and Savannakhet).



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