highlights
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FOOD safety at FAO

Addressing antimicrobial resistance (AMR)

Antimicrobial drugs play a critical role in the treatment of diseases of food producing animals and their use is essential for both animal and human health.

Concerted global actions are required to deal with AMR issues.

The availability of antimicrobials has contributed to supporting the livelihoods of livestock owners and to economic development, particularly in the poorest countries. However, the misuse or inappropriate use of antimicrobials for treatment and prevention of diseases in food production animals is often associated with the potential risk of emergence and spread of antimicrobial resistant micro-organisms. In fact, antimicrobial resistance (AMR) is a major global public health concern and a food safety issue. The risk appears to be particularly high in countries where national policies, and regulatory, surveillance and monitoring systems for AMR, and antimicrobial drug usage are weak or inadequate.

Concerted global actions are required to deal with AMR issues. Codex guidelines[1] have been adopted to provide a framework to minimize and contain AMR. At the national level, FAO calls for a holistic "food chain" approach and is working closely with the veterinarians, farmers and food safety professionals to support best animal health practices which underpin the prudent use of antimicrobials.

FAO has initiated a series of activities aimed both at providing scientific advice and developing adequate capacities among the veterinary and food safety community to address the issues related to non-human antimicrobial use at different steps of the food-chain, the emergence of resistant pathogens and associated human public health concerns. These activities include: collaboration with WHO and OIE in a series of scientific meetings on antimicrobial usage and AMR to provide the necessary scientific information to Codex and member countries; collaboration with the WHO in field projects to strengthen national/regional capacities and systems for the detection, monitoring, regulation and management of AMR along the food chain.

- FAO in collaboration with WHO and a local partner, the Kenya Medical Research Institute (KEMRI), has recently completed a project in Kenya aimed at strengthening national/regional policies, capacities and systems for the detection, monitoring, regulation and management of antimicrobial resistance risks in the poultry, beef and pig value chains. By addressing issues related to foodborne pathogen contamination and AMR in these value chains, the project contributed to poverty

[1] "*Guidelines for Risk Analysis of Foodborne Antimicrobial Resistance*" available at http://www.codex alimentarius.net/download/standards/11776/CXG_077e.pdf

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alleviation, improved nutrition, household income, food security, and also helped to optimize market opportunities. Central to the projects was an approach that undertook a whole food chain study to assess and quantify microbial contamination and AMR pathogens, in order to identify the critical stages at which prevention and control measures can be implemented most effectively.

- FAO is also completing, in collaboration with WHO, a study in Cambodia to assess and manage in an integrated manner, the public health risks associated with microbial foodborne pathogens (*Salmonella* spp., *Campylobacter* spp.) and AMR risks along the poultry value chain continuum. The collaboration is intended to foster sharing of information and data, to maximize synergies between the Organisations, and to ensure a more integrated approach that addresses microbiological contamination and AMR risks at all stages from primary production to consumption.

These projects illustrate the importance of locally-led research to generate data and information to inform and influence national policy making in relation to foodborne pathogen contamination and AMR. Key outputs from these initiatives are the development of guidance on effective regulation, and specific guidelines for feed and food animal producers on good husbandry, management and hygiene practices, with particular emphasis on the prudent and responsible use of veterinary antimicrobials. The approach taken to address AMR in the Kenya and Cambodia projects are a model to be disseminated and adapted for implementation in other countries.

FAO is committed to work with key international partners, member governments, and food chain operators to combat AMR. Given the relative ease with which AMR can spread within countries and from one country to another in an increasingly globalized world, there is clearly a need for proactive actions to assist developing countries in strengthening systems to address AMR risks. These efforts should include:

- **Strengthening** national and international interdisciplinary cooperation and developing holistic strategies and action plans
- **Improving** regulatory frameworks based on internationally agreed principles and standards (Codex, OIE)
- **Reducing** the need for antimicrobials in animal husbandry, by improving animal health disease prevention and good practices along the chain
- **Strengthening** food and human surveillance systems for AMR and the quantities of all antimicrobials being used at the national level
- **Raising** awareness (among veterinarians, value chain actors including producers and the public) about AMR
- **Developing** appropriate policies/guidance on the prudent and responsible use of antimicrobials in animal husbandry
- **Supporting** research to generate data on the prevalence and trends in AMR, as well as supporting risk assessment, risk management and risk communication in the AMR area

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