FEED THE FUTURE
The U.S. Government's Global Hunger & Food Security Initiative

ANTIMICROBIAL RESISTANCE IN LIVESTOCK

Implications for Food Security, One Health, and Development

Antimicrobial resistance (AMR) in livestock is a significant, widespread concern to sustainable agricultural development, economic growth, and population health in developing regions with food insecurity. AMR involves changes to the genetic makeup of bacteria, viruses, fungi, and parasites that weaken or negate the effects of medication intended to treat disease. AMR occurs naturally over time but **use and misuse of antimicrobial medications** in both human and animal medicine is driving rapid emergence and spread of resistant pathogens. AMR in livestock, including poultry, results in disease losses, poor productivity, and increased treatment costs. An 11% loss in global livestock production due to AMR is projected by 2050, and 24 million people in low-income countries could be forced into extreme poverty from the economic effects of AMR by 2030, according to a World Bank Group report. In a developing world already challenged with achieving food security, decreases in livestock production in the face of a rising population will significantly degrade efforts to achieve the objectives of the UN Sustainable Development Goals and the U.S. Government's Global Food Security Strategy. Reducing AMR in livestock will promote food security, support sustainable and economically viable agricultural practices, and protect human health in vulnerable populations.

Supporting Sustainable Development Goals by Reducing Livestock AMR

SDG #2 Zero Hunger: A healthy livestock population ensures a stable source of safe, high-quality food.
SDG #3 Good Health & Well-Being: Reduction in transmission of resistant zoonotic diseases improves the health of human and animal populations.
SDG #6 Clean Water & Sanitation: Clean water sources free of fecal contamination reduce the risk of resistant bacterial spillover.
SDG #13 Climate Action: Sustainable production practices reduce dependence on antimicrobials and promote positive climate action.

Opportunities to Address AMR in Livestock

1. **Ensure appropriate antibiotic use.** Enhance knowledge of antimicrobial resistance occurrence, impact, and drivers at all levels and across sectors to inform policies, practices, and investments.
2. **Improve animal health infrastructure.** Support expansion of veterinary capabilities, laboratory diagnostic services, and agricultural advising to increase good management and decision-making in animal production.
3. **Adopt best practices.** Conduct applied research in locally relevant, sustainable interventions that reduce the risk of AMR emergence and spread; ensure the adoption and scale-up of successful interventions.

The Way Forward

Ensuring the long-term availability of antimicrobials as tools to protect animal and human health is critical to future food security and economic opportunity in developing regions such as Sub-Saharan Africa.

- Promote good livestock production practices with effective extension and advisory services to reduce the need for antimicrobials and ensure appropriate use when and where antimicrobials are required.
- Strengthen the capacity of organizations and institutions that promote animal health, support AMR control, and increase awareness among stakeholders.
- Engage with and support cross-sectoral AMR policies, programs, and best practices in the livestock sector and at the national level (a One Health approach), while strengthening partnerships with the private sector and consumer organizations.
- Strengthen evidence-based surveillance and monitoring of antimicrobial usage and antimicrobial resistance in livestock production systems.