

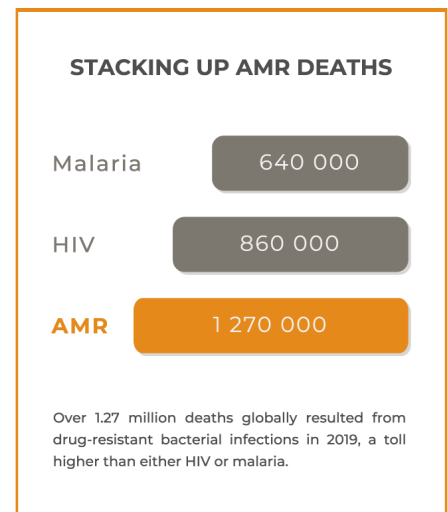
WHY SHOULD POLICYMAKERS ACT ON ANTIMICROBIAL RESISTANCE IN AGRIFOOD SYSTEMS?

ANTIMICROBIAL RESISTANCE AFFECTS HEALTH AND AGRIFOOD SYSTEMS

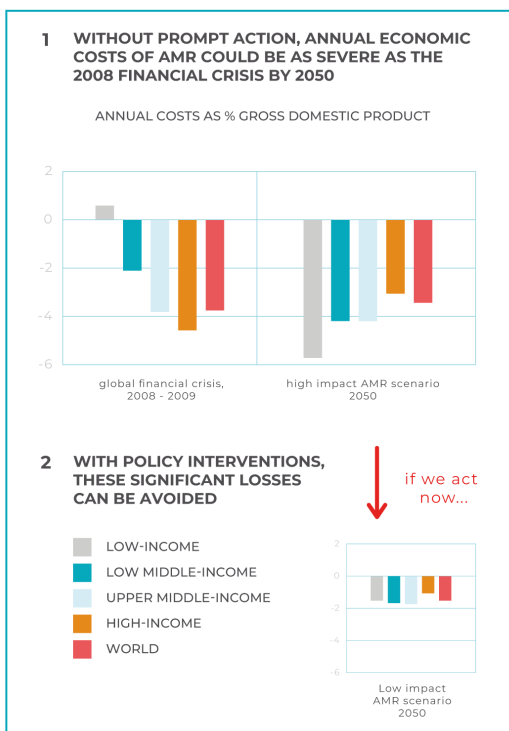
Antimicrobial Resistance (AMR) is driven by both the use and misuse of antimicrobials in human medicine, the raising of food animals and crop production. Antimicrobials also enter the environment, often from where these drugs are manufactured and the waste stream of the humans and animals consuming them.

In 2019, nearly 5 million human deaths worldwide were associated with bacterial AMR¹, of which 1.3 million human deaths were directly attributable to bacterial AMR. Apart from human health, antimicrobials are currently being widely used for food animal and crop production. This underscores the need for an integrated surveillance system that tracks antimicrobial use and AMR in the food system as well.

In some cases, antimicrobials are not used to treat infections or because of medical indications. Instead, they may be used as growth promoters to increase animal productivity. In a survey by the World Organisation for Animal Health (WOAH), a quarter of countries (40 out of 157) reported using antimicrobials for growth promotion in food animals.



Lancet GRAM Study (2022)



World Bank report, "Drug-Resistant Infections: A Threat to our Economic Future" (2017)

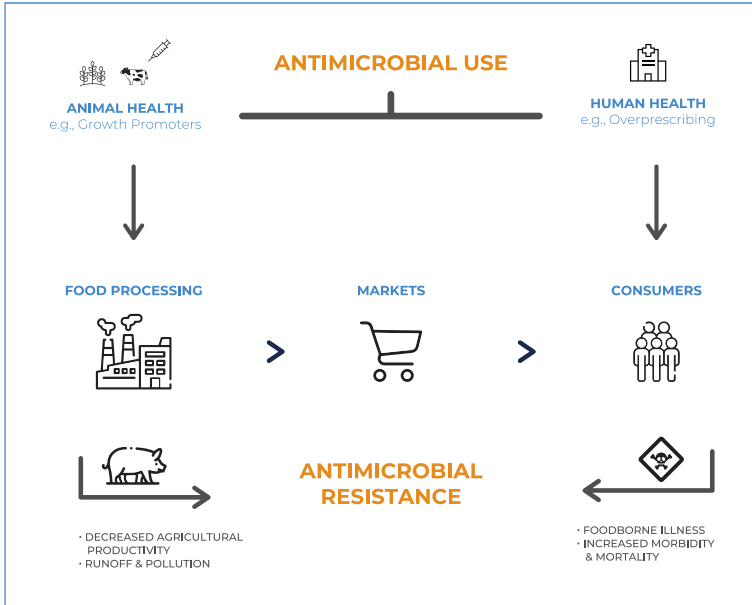
IMPACT ON ECONOMY AND FOOD SECURITY

According to the World Bank, drug-resistant infections have the potential to cause similar damage to global economy as the 2008 financial crisis, if not greater. A high-impact scenario of antimicrobial resistance could cause low-income countries to lose more than 5 percent of their gross domestic product and push up to 28 million people into extreme poverty by 2050.

If infections become untreatable or the cost of treating drug-resistant diseases increases, livestock losses or input costs would be higher, and productivity lower. The World Bank estimates that the decline in global livestock production could range from a low of 2.6 percent to a high of 7.5 percent per year by 2050.

Building a healthy agrifood system resilient to AMR means making changes in food production practices now to use antimicrobials more responsibly.

ANTIMICROBIAL USE IN FOOD ANIMALS POSES RISKS TO HUMAN HEALTH



ReAct

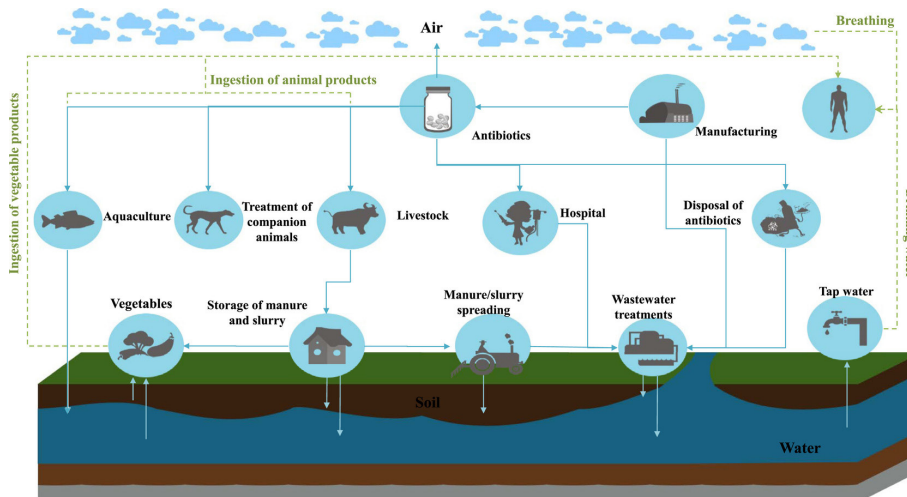
Many classes of antimicrobials critically important for human health are also used for crop and food animal production. There is a risk of resistance against these drugs spreading from food production to humans, making it more difficult to treat some infections.

According to the World Health Organization, bacteria such as Salmonella, Campylobacter and Escherichia coli are among the most common foodborne pathogens that affect millions of people each year, sometimes with severe and fatal outcomes. Overall, food contaminated by bacteria, viruses, parasites or chemical substances entering the body causes approximately 600 million cases of foodborne illnesses every year, with almost 420 000 premature deaths. Of these, over 125 000 are in children under five years old.

The magnitude of foodborne diseases makes it clear that it takes more than proper food handling or preparation to avert this risk. Reducing risk means reducing the use and the need for antimicrobials in producing food for our tables. Resistant bacteria from food can find their way to consumers through foodborne infections with serious consequences.

ANTIMICROBIALS CAN CAUSE AMR HOTSPOTS IN THE ENVIRONMENT

The overuse and use of these drugs in food and agriculture can also result in environmental contamination with antimicrobial residues, resistant genes and drug-resistant microorganisms. Up to 80 percent of antimicrobials ingested by animals as well as humans can be excreted directly into the environment. Antimicrobials used in crops or aquaculture also enter the environment directly.



Ben Y, Fu C, Hu M, Liu L, Wong MH, Zheng C. 2019. Human health risk assessment of antibiotic resistance associated with antibiotic residues in the environment: A review. Environ Res. CC BY 4.0

WHAT POLICYMAKERS CAN DO

Preventing and addressing antimicrobial resistance will bring substantial benefits across food production, animal health, the environment and healthcare sectors. This means acting now to implement policies to:

1) Ensure biosecurity

Better biosecurity measures are required at the farm level to reduce the risk of zoonotic disease transmission. By reducing foodborne infections, fewer antimicrobials will be used, whether indicated or not. Lower antimicrobial use, in turn, reduces the risk of drug-resistant microorganisms entering the food supply.

Policies to prevent the misuse of antimicrobials as growth promoters in livestock farming are urgently needed to help reduce the transmission of drug-resistant infections from the food system to humans. The use of antimicrobials should be handled with veterinary oversight, for example through prescriptions. Ensuring effective treatment of wastewater from farming operations and healthcare facilities can also help reduce AMR transmission to communities.

Food producers can do more in taking measures to reduce antimicrobial use and enhance biosecurity by:

- Avoid using antimicrobials for growth promotion
- Using antimicrobials only under proper professional guidance
- Curbing the use of antimicrobials of last-resort in human medicine

2) Improve food safety

The way food is produced, distributed and consumed is undergoing significant transformation. Climate change will bring changes in temperatures and rainfall patterns that will affect where food pathogens exist and persist. With the growth of urban agriculture, sanitation systems may not keep pace, and produce may be irrigated with wastewater contaminated by antimicrobials.

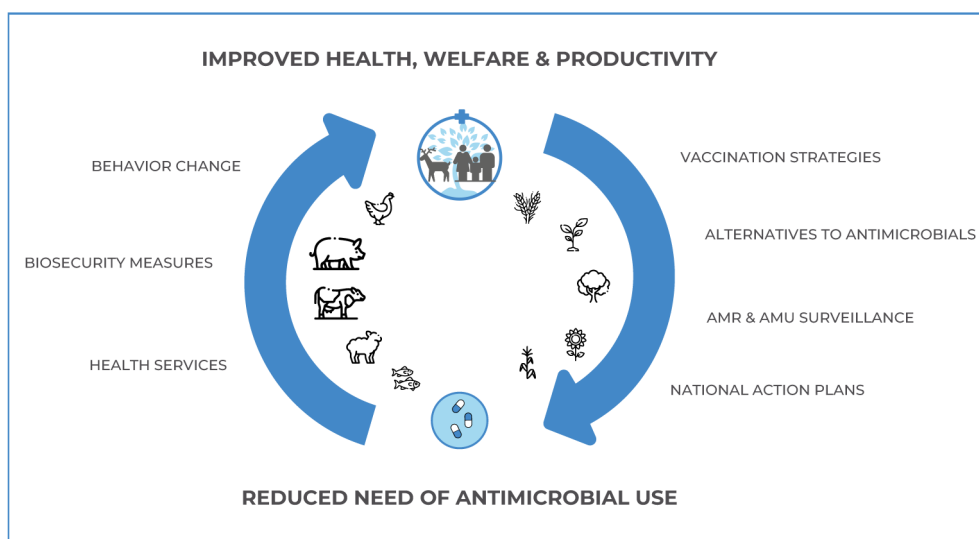
The intensification of food production has led to the increased use of agrochemicals, including antimicrobials, and the residues and drug-resistant food pathogens can enter the food supply and the environment. These changes pose challenges to food safety. Educating both food buyers and the public about proper storage and cooking will help lessen the incidence of foodborne infections.

However, policymakers will need to proactively identify drivers of foodborne illness, including from the overuse of antimicrobials, track and investigate cases of foodborne disease, and find ways to better prevent these illnesses and outbreaks.

3) Facilitate data collection

Data collection across agrifood system is essential to monitor and build accountability for the responsible use of antimicrobials. Collecting data on antimicrobial use and antimicrobial resistance across livestock species, aquaculture and crops also will contribute to an integrated surveillance system.

Such surveillance, shared via the International FAO Antimicrobial Resistance Monitoring (InFARM) System, will help track the use of antimicrobials in crops and emerging drug resistant infections in animals and crops. Making transparent and tracking the use of antibiotics, such as for growth promotion in veterinary feed directives, also supports effective action.



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4) Encourage consumer action

Food buyers and food producers should be encouraged to reduce the use of antimicrobials across the food value chain. By placing requirements on what they procure, food buyers can signal those supplying food to manage antimicrobials more responsibly.

Consumer scorecards can be used to rate whether and how food buyers are sourcing from suppliers that manage the use of antimicrobials appropriately in the production process. These ratings can inform consumers as to which restaurant or grocery chains they might wish to make their purchases, and certification labels and government regulations can encourage food producers to adopt such practices.

THE TIME TO ACT IS NOW!
SCAN HERE FOR MORE RESOURCES:



HAVE QUESTIONS?
PLEASE CONTACT
ANTIMICROBIAL-RESISTANCE@FAO.ORG

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