



# Food-Animal Farming and Antimicrobial Resistance

**For Prelims:** Antimicrobial Resistance, Pandemic, Climate Change, WHO, ICMR, Zoonotic Disease.

**For Mains:** Food-Animal Farming and **Antimicrobial** Resistance.

## Why in News?

Poor animal health in factory farming can negatively affect food safety, our environment and climate, leading to [Antimicrobial Resistance \(AMR\)](#).

- Factory farming or intensive food-animal farming is the **intense and confined farming of animals** such as pigs, cows, and birds. They are industrial facilities that raise large numbers of animals, **mostly indoors, in conditions intended to maximise production at a minimal cost.**

## What are the Issues?

- The suffering of animals within farms around the world is too often overlooked or seen to be separate from the **big issues such as** [pandemics](#) and the public health crisis, [climate change](#) and biodiversity loss, food insecurity and malnutrition.
  - In reality, this can **exacerbate the global problems as well** as causing immense cruelty to billions of animals.
- Producing more than 50 billion factory-farmed land animals each year to satisfy growing demand for cheap meat requires using breeds of genetically uniform **animals squashed together**, creating an **ideal breeding ground for disease** that can jump to humans.
  - When diseases jump from one species to another, they often become more infectious and cause **more serious illness and death**, leading to global pandemics.
  - Bird flu and swine flu are **two key examples where new strains constantly emerge** from intensively farmed animals.
- However, there is an **addition to this list — Antimicrobial Resistance** which is overlooked among these big issues.
- The **overuse of antibiotics on factory farms leads to superbugs that spread to workers**, the environment and into the food chain.
- Factory farms, characterised by substandard husbandry practices and poor animal welfare, **drive the increased use of antimicrobials**, and are connected to the emergence of AMR alongside a range of [zoonotic pathogens](#).

## What is AMR and How Prevalent is it in India?

- AMR is the **resistance acquired by any microorganism** (bacteria, viruses, fungi, parasite, etc.) against antimicrobial drugs that are used to treat infections.
  - It occurs when a microorganism changes over time and no longer responds to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death.

- The [World Health Organisation \(WHO\)](#) has identified **AMR as one of the top ten threats to global health.**
- In India, **over 56,000 newborn deaths each year due to sepsis** caused by organisms that are resistant to first line antibiotics.
- A study reported by [ICMR \(Indian Council of Medical Research\)](#) from 10 hospitals showed that when Covid patients acquire drug-resistant infections in hospitals, the mortality is almost 50-60%.
- The multi-drug resistance determinant, **New Delhi Metallo-beta-lactamase-1 (NDM-1)**, emerged from this region.
  - Africa, Europe and other parts of Asia have also been affected by multi-drug resistant typhoid originating from South Asia.

## What Initiatives have been taken by the Government to Prevent AMR?

- **AMR Surveillance and Research Network (AMRSN) was launched in 2013, to generate evidence and capture trends and patterns** of drug resistant infections in the country.
- **The National Action Plan on AMR** focuses on One Health approach and was launched in April 2017 with the aim of involving various stakeholder ministries/departments.
- ICMR along with **Research Council of Norway (RCN)** initiated a joint call for research in antimicrobial resistance in 2017.
- ICMR along with the Federal Ministry of Education and Research (BMBF), Germany has a joint **Indo-German collaboration for research on AMR.**
- ICMR has initiated [Antibiotic Stewardship Program \(AMSP\)](#) on a pilot project across India to control misuse and overuse of antibiotics in hospital wards and ICUs.

## Way Forward

- There is a need to develop sustainable food systems by **increasing the demand for plant-based foods**, in turn, reducing reliance on farmed animals and making higher welfare production systems — with more space, fewer antibiotics, healthier growth, and more natural environments — more feasible.
- There is a need to transform the food system to be **more sustainable and significantly improve the overall health** of animals and humans.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

### Prelims

**Q.** Which of the following are the reasons for the occurrence of multi-drug resistance in microbial pathogens in India? **(2019)**

1. Genetic predisposition of some people
2. Taking incorrect doses of antibiotics to cure diseases
3. Using antibiotics in livestock farming
4. Multiple chronic diseases in some people

**Select the correct answer using the code given below.**

- (a)** 1 and 2
- (b)** 2 and 3 only
- (c)** 1, 3 and 4
- (d)** 2, 3 and 4

**Ans: (b)**

## **Mains**

**Q.** Can overuse and free availability of antibiotics without Doctor's prescription, be contributors to the emergence of drug-resistant diseases in India? What are the available mechanisms for monitoring and control? Critically discuss the various issues involved. **(2014)**

[Source: DTE](#)

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