



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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