# Press Note

***Pharma antibiotics are polluting Indian rivers.***

The study finds Indian rivers contain antibiotic residues that may contribute to the growing problem of "antimicrobial resistance" and negative effects on the ecosystem and human health.

New Delhi, February 24, 2022: A new Toxics Link study, released today, titled 'Menace of Antibiotic Pollution in Indian Rivers' has raised serious concerns over antibiotic residues found in river water samples across India. Antibiotics are important life-saving medicines and play a key role in the wellbeing of human health. However, indiscriminate use and lack of regulatory standards for antibiotics in effluents from pharmaceutical industries are contributing to the rise of antibiotic pollution in rivers. This rising trend of antibiotic pollution poses serious threat to ecology and human health which can have far reaching consequences such as the development of Antimicrobial Resistance (AMR). "India being one of the major users and producers of antibiotics in the world is more prone to the ill effects of antibiotic pollution", said Piyush Mohapatra, Senior Programme Coordinator, Toxics Link.

World Health Organization (WHO) has declared AMR as one of the top 10 global public health threats facing humanity. The Prime Minister also drew attention of the countrymen to the AMR menace in his *Mann ki Baat* on 31st July 2016, and emphasized on the need to practice responsible use of antibiotics. In this context, the Indian Ministry of Health and Family Welfare also came up with the National Action Plan for containing AMR (NAP-AMR) in April 2017. Some of the objectives of NAP-AMR include developing standards for antibiotic residues, developing a national framework for surveillance of antibiotic residues in environment and establishing their linkages with AMR.

To combat the serious threat of AMR in India and the dangers of unchecked antibiotic residues from the pharmaceutical industries contaminating the ecosystem, the Ministry of Environment, Forest and Climate Change (MoEF & CC) of Government of India came up with the draft standards for 121 antibiotic residues in the treated effluents from the pharmaceutical industry in early 2020. However, the draft has not been notified yet.

In the present study antibiotic residues were detected in water samples from four Indian rivers, i.e., Yamuna River (New Delhi), Gomti River (Lucknow), Zuari River (Goa) and Cooum River (Chennai). Three antibiotics; namely, Ofloxacin, Norfloxacin, and Sulfamethoxazole were detected in these river water samples. Ofloxacin (0.71 µg/L) and Sulfamethoxazole (0.2 µg/L) were found in Yamuna River. Norfloxacin (0.93 µg/L) was detected in Zuari River. Ofloxacin (0.54 µg/L) was also present in Gomti River and Cooum River. "All the antibiotics detected are found to be 2 to 5 times higher than the draft notification limits proposed by MoEF&CC for the respective compounds", said Dr. Omkar Gaonkar, Programme Coordinator, Toxics Link.

The sample size in this study is limited; however, the findings of this study are alarming and highlight the potential possibility of widespread antibiotic pollution in the country. "Most importantly, the locations where antibiotic residues are detected, are not necessarily in close proximity to major pharmaceutical industrial hubs. Therefore, the study raises concerns on the sources of antibiotic residues into these rivers which can be from both treated as well as untreated sewage", said Mr. Satish Sinha, Associate Director, Toxics Link. He also reiterated that India has a program to curb AMR, and

efforts must be taken to bring together all the stakeholders to find ways to deal with this issue of AMR- one of the most challenging public health issue.

Recently, a report has also been released by a group of scientists across the globe that has raised serious concerns on the presence of pharmaceutical residues, including antibiotics in the rivers across the world.

**Key findings of the study:**

- Ofloxacin (0.54 to 0.71 µg/L) was detected in samples from Yamuna River (New Delhi), Gomti River (Lucknow), and Cooum River (Chennai)
- Norfloxacin (0.93 µg/L) was detected in the water sample from Zuari River (Goa)
- Sulfamethoxazole (0.2 µg/L) was also detected in Yamuna River (New Delhi) in addition to Ofloxacin
- The concentrations of the antibiotics analysed in the present study (Ofloxacin, Norfloxacin, and Sulfamethoxazole) are 2–5 times higher than the draft notification limits proposed by MoEF&CC for the respective compounds
- The study indicates that antibiotic residues are ubiquitous and can present an imminent threat to the water resources in India

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