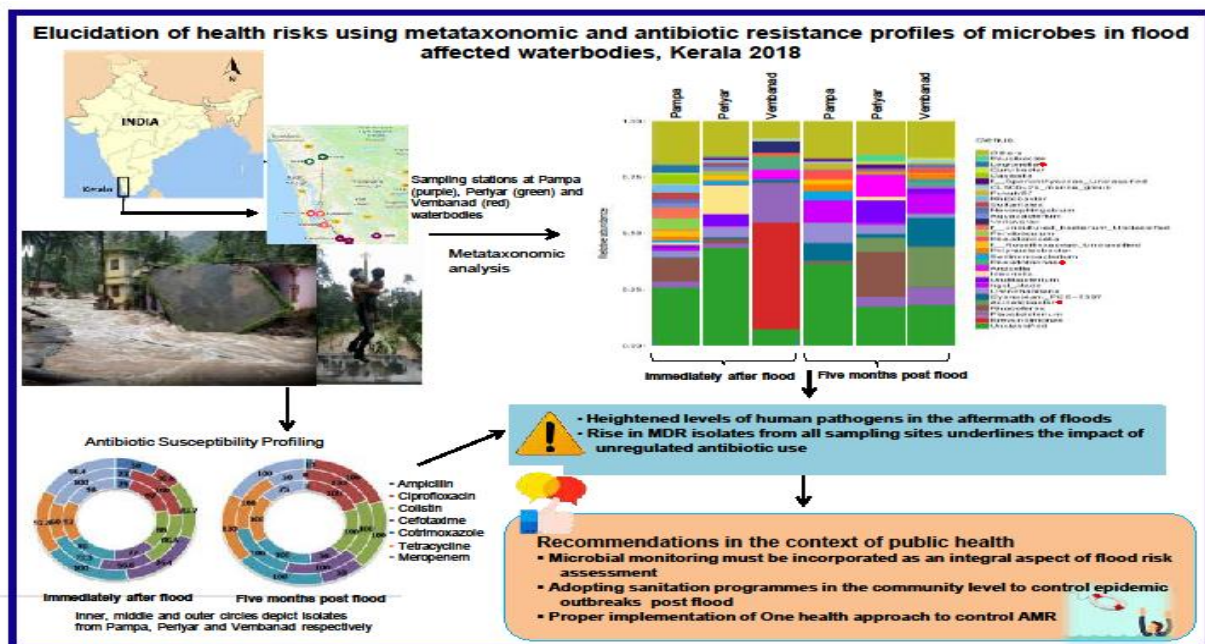


Scientists at DBT-RGCB elucidated the health risks associated with microbes in flood affected water-bodies of Kerala during 2018

Flood of 2018 caused havoc in the State of Kerala in terms of infrastructure and health, and was declared as Level-3 calamity by the Central Government. In this context, Dr. Sabu Thomas and team from DBT's Rajiv Gandhi Center for Biotechnology (DBT-RGCB), Thiruvananthapuram, conducted a comprehensive spatio-temporal analysis of the microbiome diversity and its antibiotic susceptibility profile in and around the three major affected aquatic biotopes, Pampa and Periyar river systems and Vembanad lake. Culture-based identification of cefotaxime and co-trimoxazole resistant *Acinetobacter* spp. from well waters near Pampa and multi-drug resistant *Pseudomonas* spp. from all sampling stations magnifies the impact of unregulated antibiotic use through anthropogenic interventions.



Metataxonomic analyses revealed heightened levels of *Variovorax*, *Brevundimonas*, *Pseudomonas* and *Legionella* sp. and other bacterial pathogens of medical importance which were spotted from different sampling sites in the aftermath of floods, may pose a potential threat on entering a susceptible host. The investigation emphasizes the importance of implementing effective sanitation programs in the community level to control epidemic outbreaks post-floods. The study also warrants microbial monitoring and adoption of One Health approach as integral pointers to flood risk assessment and AMR control with an emphasis on public health.

The severity of urban floods is believed to increase in future due to global warming, deforestation, sand mining and unregulated modernisation. Previous reports on elevated levels of pathogen counts and antibiotic resistance determinants from inundated water-bodies underline the integral role of microbes in predicting environmental impacts on ecosystems.

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