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Policy Interventions, People's Perception and Land use alterations: Implications of Direct Drivers of Change on the Water Quality Status of Upper and Middle Ganga

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Abstract

Introduction: River Ganga holds significant importance in India's religious, socio-cultural, and utilitarian spheres. Unfortunately, due to overuse and pollution resulting from various human activities along its course, the river's ecosystem services have declined, and it is facing severe threat. The study addresses potential factors responsible for water quality changes in River Ganga.

Methods & Materials: A socio-economic survey of 400 respondents was conducted to acquire insights into individuals' perceptions regarding the changing river quality trends and identify the major stressors. Efforts have been made to improve the quality of the river through various policy interventions such as the Ganga Action Plan and the 'Namami Gange' program, that have shown improvement in parameters of DO, BOD, and coliform count at multiple locations

Results & Conclusion: Coliform concentrations in some areas exceed permissible limits. The land use land cover map generated, after NMCG initiatives focused on changes observed before (2005-2006) and after the implementation of the Namami Gange Programme (2017-18) indicating notable shifts in agricultural land to built-up areas due to urban expansion and the transformation of barren land to forested areas in response to afforestation initiatives. Proactive approaches along with the enhancement of the treatment capacity of STPs can restore the river to its former glory.