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REVIEWER'S REPORT

Manuscript No.: IJAR-54098

Title:CRISPR-Cas9 and Emerging Genome Editing StrategiesinRice: ADataset-DrivenRoadmapfor Future Breeding

Recommendation:
Accept as it is .....
Accept after minor revisionYES
Accept after major revision .....
Do not accept (*Reasons below*).....

Rating	Excel.	Good	Fair	Poor
Originality	YES			
Techn. Quality		YES		
Clarity		YES		
Significance	YES			

Reviewer Name: Dr. Himanshu Gaur **Date:**29/09/2025

Detailed Reviewer'sReport

The manuscript "Impact of Economic Activity on PM2.5 Levels in India: An Empirical Study on Selective Indian Districts" presents a thorough and methodologically sound analysis of air pollution across rural and peri-urban regions, linking PM2.5 levels to economic activities such as agriculture, mining, industrial production, and construction. The study's strengths lie in its zone-wise district-level analysis, integration of multiple secondary datasets (SHRUG, ICRISAT, Census, forest cover), and clear articulation of causal factors, including biomass fuel use, stubble burning, and forest cover loss. The paper provides valuable policy insights, emphasizing decentralized air quality management, clean energy transitions, forest protection, and sustainable agricultural practices. Minor limitations include reliance on 2013 data, aggregation of industrial sectors without sub-sector analysis, limited discussion of urban-rural pollution interactions, and the need for enhanced visualization of spatial trends. The study could be further strengthened by updating datasets to recent years, disaggregating secondary sector contributions, including maps or heatmaps for clearer spatial understanding, examining transboundary urban-rural pollution effects, and providing empirical evaluation of existing policies such as NCAP and crop residue management schemes. Despite these minor issues, the manuscript makes a significant contribution to understanding the interplay between rural economic activity and air quality in India and is recommended for **acceptance with minor enhancements** to improve clarity and policy relevance.

Recommendations
The authors are recommended to update and expand their data sources by incorporating more recent datasets (2019–2023) for PM2.5 levels, district-level GDP, and energy usage, including satellite imagery and ground-based monitoring, to reflect current trends and policy impacts. A more detailed disaggregation of economic and industrial sectors is advised, distinguishing between specific industries such as coal, iron, and bauxite, to better identify high-emission activities and enable targeted mitigation strategies. Strengthening spatial analysis through the inclusion of zone-wise maps, heatmaps, or geostatistical models would provide clearer visualization of PM2.5 hotspots and their correlations with economic activity, forest cover, and fuel usage. The study should also assess the effectiveness of existing

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policies, including NCAP and crop residue management schemes, and examine urban-rural pollution linkages to account for transboundary effects that influence rural air quality. Finally, promoting sustainable practices and ecological interventions—such as adoption of cleaner cooking fuels, zero-stubble burning, bio-fertilizers, afforestation, green buffer zones, and community-led forest conservation—would help mitigate environmental and health impacts while enhancing ecological resilience in rural districts.