

Assessment of Environmental Impact for Rice Mills in Burdwan District: Special Emphasis on Groundwater, Surface Water, Soil, Vegetation and Human Health

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Abstract : Rice milling is an important activity in agricultural economy of India, particularly the Burdwan district. However, the environmental impact of rice mills is frequently underestimated. The environmental impact of rice mills in the Burdwan district is a major source of concern, given the importance of rice milling in the local economy and food supply. In the Burdwan district, more than fifty (50) rice mills are in operation. The goal of this study is to investigate the effects of rice mills on several environmental components, with a particular emphasis on groundwater, surface water, soil, and vegetation. The research comprises a thorough review of numerous rice mills located around the district, utilising both qualitative and quantitative approaches. Water samples taken from wells near rice mills will be tested for groundwater quality, with an emphasis on factors such as heavy metal pollution and pollutant concentrations. Monitoring rice mill discharge into neighbouring bodies of water and studying the potential impact on aquatic ecosystems will be part of surface water evaluations. Furthermore, soil samples from the surrounding areas will be taken to examine changes in soil characteristics, nutrient content, and potential contamination from milling waste disposal. Vegetation studies will be conducted to investigate the effects of emissions and effluents on plant health and biodiversity in the region. The findings will provide light on the extent of environmental degradation caused by rice mills in the Burdwan district, as well as valuable insight into the effects of such operations on water, soil, and vegetation. The findings will aid in the development of appropriate legislation and regulations to reduce negative environmental repercussions and promote sustainable practises in the rice milling business. In some cases, heavy metals have been related to health problems. Heavy metals (As, Cd, Cu, Pb, Cr, Hg) are linked to skin, lung, brain, kidney, liver, metabolic, spleen, cardiovascular, haematological, immunological, gastrointestinal, testes, pancreatic, metabolic, and bone problems. As a result, this study contributes to a better knowledge of industrial environmental impacts and establishes the framework for future studies aimed at developing a more ecologically balanced and resilient Burdwan district. The following recommendations are offered for reducing the rice mill's environmental impact: To keep untreated effluents out of bodies of water, adequate waste management systems must be established. Use environmentally friendly rice milling processes to reduce pollution. To avoid soil pollution, rice mill by-products should be used as fertiliser in a controlled and appropriate manner. Groundwater, surface water, soil, and vegetation are all regularly monitored in order to study and adapt to environmental changes. By adhering to these principles, the rice milling industry of Burdwan district may achieve long-term growth while lowering its environmental effect and safeguarding the environment for future generations.

Keywords : groundwater, environmental analysis, biodiversity, rice mill, waste management, diseases, industrial impact

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