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**Environmental Changes Caused by Illegal Gem Mining in Sri Lanka**

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**Abstract**

As a major source of income in Sri Lanka, gem mining has a positive impact on revenue generation while also having negative effects on the environment. As an industry, people benefit from the operation of thousands of legal and illegal gem pits each year. Exploring the environmental effects of illegal gem mining and discussing the solutions that can control those environmental issues are the main objectives of this study. The major gem mining region in Sri Lanka, which is Ratnapura, comprised the population of the study. The sample consisted of five tunnel gem mines and five river gem mines selected using the cluster sampling method. Both primary and secondary data were collected through field observations, interviews and journals, reports and books. This study introduces an integration of green criminology into the examination of environmental harm caused by illegal gem mining, emphasizing both of the ecological consequences and socio-legal aspects of the industry. The research demonstrates the connection between criminal activity, unsustainable resource extraction and environmental impact. The study reveals that in areas where productive lands and forests are converted into gem pits and processing areas, changes in land use are a noticeable issue. The impacts on the terrestrial environment are numerous, including the loss of vegetation cover, disturbance to the soil profile, and alteration of ecological balance with the habitat. Long-term impacts include the formation of sinkholes, contamination of groundwater, surface water, and soil. Tunneling under roads and unsustainable mechanized digging have been reported to damage essential infrastructure. As suggested in this study, government regulations are required to minimize the impact of gem mining activities on the environment.

**Keywords:** *Gem mining, Gemming, Environmental impact, Environmental safety*