

ENVIRONMENTAL IMPACT ASSESSMENT OF SMALL HYDROPOWER PROJECTS IN SRI LANKA: A LITERATURE REVIEW

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Sri Lanka's pursuit of sustainable energy amid the global energy crisis involves transitioning to alternative sources, with small hydropower projects emerging as a viable option. Mini hydropower projects are small-scale hydroelectric power plants designed to generate electricity from flowing water in rivers and streams. These plants generate electricity from the kinetic energy of flowing water in rivers and streams, offering renewable energy with lower carbon emissions. This study aims to comprehensively analyze the positive and negative environmental consequences of small hydropower projects in Sri Lanka. There are about 100 small hydropower projects operating in the country, and this research looks at the results of a few of those projects and focuses on their environmental impacts. The analysis is based on an existing literature review and previous environmental impact assessments conducted for small hydropower initiatives. Analyzes the results of environmental impact assessments carried out in association. Results and discussions reveal a range of environmental consequences, including changes to river ecosystems, disruption of aquatic habitats, and potential impacts on local communities. Through evidence-based findings, research highlights both positive aspects, such as reduced carbon emissions and increased renewable energy generation, and negative aspects, such as altered water flow patterns and potential threats to biodiversity. Also, the EIA reports and research that have been done emphasize the importance of careful planning and continuous monitoring to minimize adverse effects. Finally, the assessment underscores the complex balance between renewable energy generation and environmental conservation in small hydropower projects. These projects contribute to sustainable energy, and their environmental impacts require constant attention. This research enriches our understanding of the complex interplay between development and environmental sustainability in Sri Lanka's pursuit of renewable energy.

Keywords - *Small Hydropower Projects, Environmental Impacts, Renewable Energy, Environmental Impact Assessment, Sri Lanka*

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