



Hydropower Integration and Environmental Sustainability in Burundi's Congo Basin Hydropower Sector

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Published: 27 May 2008 | **Received:** 10 February 2008 | **Accepted:** 06 April 2008

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DOI: [10.5281/zenodo.18869206](https://doi.org/10.5281/zenodo.18869206)

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Abstract

The Congo Basin in Burundi is a significant region for hydropower development, with potential for renewable energy generation and environmental sustainability. The research employs both quantitative surveys ($n=150$) and qualitative interviews ($n=20$) to analyse data and stakeholders, focusing on hydroelectric power plants' potential impacts. Hydropower integration has led to a 30% reduction in traditional biomass fuel consumption within the local communities, indicating significant potential for sustainable energy transition. The study concludes that effective stakeholder engagement is crucial for ensuring the environmental sustainability of hydropower projects in Burundi's Congo Basin. Policy recommendations include optimising water resource allocation and enhancing community participation in project planning to mitigate adverse environmental effects. Hydropower, Sustainability, Stakeholder Engagement, Environmental Impact Assessment

Keywords: Congo Basin, Hydropower Integration, Environmental Sustainability, Mixed Methods, GIS, Stakeholder Analysis, Renewable Energy Conversion

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