Economic Feasibility Study of Green Business Development on Post-Mining Land: Case Study of PT Bukit Asam Tbk

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Abstract

Coal mining activities often result in significant land degradation, and conventional reclamation practices which frequently stop at simple backfilling have proven inadequate for restoring ecological functions or providing long-term economic value, leaving many sites abandoned. To strategically address this gap by integrating environmental restoration with sustainable value creation, this study assesses the financial feasibility of implementing a green business model: a productive reclamation project featuring a 1.6-hectare Musang King durian plantation on post-mining land at PT Bukit Asam Tbk (PTBA). Using a quantitative descriptive case study approach, the financial viability was analyzed over a 20-year investment period, applying a 9.04% discount rate. The results indicate that the durian plantation project is financially feasible with strong performance metrics: it yielded a Net Present Value (NPV) of Rp 2,217,428,673 (NPV > 0), an Internal Rate of Return (IRR) of 29.47% (well above the 9.04% discount rate), a Benefit-Cost Ratio (BCR) of 2.21 (BCR > 1), and a short Payback Period (PP) of approximately 6 years and 2 months. In conclusion, this project successfully transforms reclamation obligations into a highly profitable agricultural venture, demonstrating that post-mining land can be converted into a productive asset that delivers consistent financial returns while supporting long-term economic and environmental sustainability.

Keywords: Green Business, Financial Feasibility, Internal Rate of Return, Payback Period, Net Present Value.