USING TECHNOLOGY FOR GREEN BRICK INITIATIVE FOR SUSTAINABLE DEVELOPMENT: A DISTRICT LEVEL APPROACH IN KARNATAKA

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Introduction:

Karnataka occupies a significant position in India's granite industry, ranking fourth in production after Rajasthan, Gujarat, and Andhra Pradesh. The state contributes nearly 25% of the nation's granite reserves, with major production hubs located in Mysuru, Koppal, Hassan, Bengaluru, and Kolar. Karnataka is especially known for its variety of granites, including sought-after types like Himalayan Blue, Chilly Red, and Sira Grey, which are in demand both domestically and internationally. However, granite processing in the state generates considerable waste, particularly in industrial zones. For instance, the Jigani Industrial Area near Bengaluru alone produces over 150 tonnes of granite waste daily. This waste, if not properly managed, leads to severe environmental issues such as land degradation, air pollution from fine particulate matter, and contamination of nearby water bodies.

This project proposes the development of sustainable methods to repurpose granite waste, specifically through its integration into brick manufacturing processes. Such an initiative would not only encourage the efficient use of industrial byproducts but also contribute to reducing pollution levels and conserving natural resources like clay and topsoil. Furthermore, by fostering innovation in eco-friendly construction

materials, this approach could generate employment opportunities and offer an alternative revenue stream for the state's mining and construction sectors.

OBJECTIVES

- Promote sustainable development through waste reduction, resource conservation, and eco-friendly construction.
- Granite waste utilisation: Reduce environmental impact & generate revenue for the state.
- Green brick sector: Generate employment & boost the state's economic growth.
- Sustainable green brick supply chain: Consistent, reliable raw materials and products.

Methodology

- Identifying potential sites for GBISD implementation, considering factors like accessibility, availability of granite waste, and environmental impact.
- Technology Review: Conducting a comprehensive technology review to research and evaluating existing technologies for granite waste processing and green brick production.
- Conduct a needs assessment study to identify the requirements and expectations of stakeholders regarding training, employment, environmental concerns, and economic benefits related to the GBISD project.
- Feasibility Study: Conduct a feasibility study to determine the technical viability of the GBISD, encompassing equipment, raw material sourcing, energy and water requirements, and waste management.

Result And Conclusion (After Completion Of Project)

- Comprehensive Understanding: Gain a comprehensive understanding of the GBISD, including its cost and benefits, challenges, and best practices.

- Policy Recommendations: Develop policy recommendations for governments, industries, and stakeholders to promote sustainable development.

Future Scope:

Identify future research directions for improving the GBISD and promoting sustainable development.