BUSINESS PLAN ON THE PRODUCTION OF PROPROPYLENE BASED COMPOSITES REINFORCED WITH HUSK MAHOGANY SAWDUST FOR SEDI-ENUGU DISPOSABLE PLASTIC SPOONS

Project Title:

The production of propropylene based composites reinforced with husk mahogany sawdust for SEDI-Enugu disposable plastic spoons

Implementing Institution

Scientific Equipment Development Institute (SEDI) Enugu.

Executive Summary

This project aims to produce and commercialize **eco-friendly polypropylene composites** reinforced with **rice husk and mahaogany sawdust** for the manufacturing of disposable plastic spoons. It addresses Nigeria's dependence on imported polymers, high production costs and plastic waste pollution. By using local agricultural and wood residues, the project supports **wastes-to-wealth creation job creation and sustainable industrialization**. The project cost is **#24,850,000** over 12months, with commercialization target through NASENI's innovation network and local plastic manufacturing.

Problem statement

Nigeria's plastic industry imports over 70% of its raw materials. At the same time, large quantities of rice husk and sawdust are wasted annually, polluting the environment. A local solution that coverts these residues into industrial feedstock can reduce costs, save foreign exchange and protect the environment.

Objectives

- To develop a cost-effective composite material from polypropylene, rice husk and mahogany sawdust.
- To produce disposable spoons that meet quality and safety standards.
- Establish a scalable model for eco-friendly plastics production.
- Create employment and promote green industrialization.

Market Analysis

Nigeria's annual demand for disposable cutlery exceeds **2 billion units** valued at over **#10billion**. With growing awareness of environmental sustainability and policies restricting non-biodegradable plastics, there is a large and growing market for biodegradable and low-cost alternatives.

Implementation Plan (12 months)

Phase	Activities	Duration
1.	Material formulation, testing and optimization	3 months
2.	Prototype production and pilot plant setup	4 months
3.	Product validation and certification (SON)	3 months
4.	Commercialization lunch distribution	2 months

Budget Summary (#24, 850,000)

Item	**Cost (#)**
Raw material and consumables	3,200,000
Equipment and tooling	6,500,000
Research and testing	3,000,000
Personnel operations	6,200,000
Training and commercialization	2,950,000
Monitoring and evaluation	3,000,000
Total	**#24,850,000**

Expected Economic Impact

The project will strengthen Nigeria's slow but stimulating economy by replacing imported polymers with local composites, creating new value chains for agricultural and wood waste. It will stimulate rural income generation, job creation, SME growth and export potential, while promoting sustainable manufacturing.

Sustainable Plan

The project will sustain itself through product sales, technology transfer to local manufacturers and continuous R&D improvement. By utilizing abundant local materials, production costs remain low and profitability high, ensuring long-term economic and environmental viability.

Alignment with SDGs and NASENI's Mandate

- **SDG 9:** Industry, Innovation and Infrastructure
- **SDG 12:** Responsible Consumption and Production
- **SDG 13:** Climate Action
- It supports NASENI's 3Cs of **Creation, Collaboration and Commercialization.**