Extraction of banana fibre: Extraction of banana fibre for rural economic empowerment

Kumasi, Ghana
Agogo, Ghana
Rita Namoe Tabi

Year Founded: 2014
Organization type: nonprofit/ngo/citizen sector
Project Stage: Idea
Budget: $1,000 - $10,000

- Employment
- Eco Products
- Recycling
- Rural

Project Summary

Concise Summary: Help us pitch this solution! Provide an explanation within 3-4 short sentences.

The use of natural fibres is on the ascendency. This is as a result of their exceptional properties like biodegradability, light weight, strenght among others. Fibres of good quality can be obtained from the pseudostem of banana plants.

WHAT IF - Inspiration: Write one sentence that describes a way that your project dares to ask, "WHAT IF?"

What if a beautiful dress was made from the waste of a banana plant.

About Project

Problem: What problem is this project trying to address?

Plantation sites of banana and plantain plants are amassing a lot of filth as a result of waste from plants that have already been harvested. This is because the banana plant can fruit just once, after which it must be cut down to make room for another plant to fruit. In a nutshell, a very promising raw material is not utilised in Ghana but left to rot away on farms.

Solution: What is the proposed solution? Please be specific!

Design and construct a decortication machine to extract fibre from the pseudostems of plantain and banana. This fibre can be used to make a lot of products - as a reinforcement for fabricating composite materials, can be spun into textiles, pulping for paper production, bags, doormats, ropes, among others.

Awards

Approved as a final year undergraduate project.

Impact: How does it Work

Example: Walk us through a specific example(s) of how this solution makes a difference; include its primary activities.

Plantains and banana is usually cultivated in the rural areas in Ghana. The plant is cut down to rot after it fruirs, which is once. A machine can be made to extract fiber from this plant to make useful products.
Impact: What is the impact of the work to date? Also describe the projected future impact for the coming years.

The project is at the preliminary stages of designing a machine which will be fabricated locally and will be used to extract fibre from the pseudostems of banana and plantain farms.

Spread Strategies: Moving forward, what are the main strategies for scaling impact?

The success of this project is expected to empower the rural folk by offering unlimited opportunities for employment. Jobs that would be created will include stem cultivation, decorticator design and fabrication, fibre extraction, weaving of fibre strands into useful products and marketing and sale of these products.

Sustainability

Financial Sustainability Plan: What is this solution’s plan to ensure financial sustainability?

The project will be self-sustained since the products made are common household products that can be sold out easily and the revenue ploughed back.

Marketplace: Who else is addressing the problem outlined here? How does the proposed project differ from these approaches?

1. Sustainable Health Enterprises (SHE) is a nonprofit organization manufacturing and distribution affordable, quality and eco-friendly sanitary pads made from banana fibre. 2. In Japan, banana fiber is being used to make traditional dresses like kimono. What this project targets is the rural areas where the banana and plantains are cultivated to empower them to convert the waste from these plants into useful products. Income generation will increase since farmers will not only benefit from the fruits but also the pseudostem.

Team

Founding Story

I was harvesting okro from the backyard garden one day when I realised that the plantain stem that was cut down some weeks ago was going bad but had some strands that looked like fibre. I then started reading on banana fibre and saw it was a promising raw material but not used in Ghana.

Team


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