

Innovative, Clean and Sustainable Transport

The Bamboo Bikes Initiative from Ghana



Objectives

- To pilot test and promote the use bamboo bicycles as an innovative approach to combat climate change by offering a clean transportation system.
- To empower women and youth in the implementation of the project



Key Activities

- Mobilized and trained 25 youth in bamboo bike manufacturing.
- Established bamboo manufacturing training centre and obtained ISO certification.
- Negotiated with MGT Engineering-of China for technology transfer, procurement of tools and accessories and certification of bamboo bike builders.
- Negotiated to obtain 1,500 bamboo seedlings for plantation establishment.
- Negotiated and up-scaled the project with donor support



Results

- Established 10,000 capacity bamboo nursery
- Planted 2.5 ha of exotic bamboo.
- Trained 35 unemployed youth in the manufacturing and assembling of bamboo bikes.
- Offered full-time employment to the trained and certified bamboo bike artisans.
- Produced 500 multi-purpose bikes and frames.
- Address rural transportation needs
- Produce non polluting and high quality bikes to meet the international export markets



Environmental impact

- Bamboo minimizes CO₂ and generates up to 35% more oxygen than equivalent stand of trees.
- Bamboo plantations support sequestration of CO₂.
- Positive investment in the local economy by creating jobs for the youth and women.
- Construction of bamboo bikes is much less energy intensive than the production of steel bikes.
- During the production of a steel frame, about 5 kg CO₂ are emitted.
- While bamboo bike can be directly recycled, steel requires additional energy-inputs for recycling.



Expected Mid-and long term impacts on environment

- Bamboo helps improve air and water quality in areas where it is harvested.
- Its root system is constructed in such a way as to reduce soil erosion, a major concern for many farmers.
- It does not leach many nutrients from the ground, as it pulls silica from the soil.
- Less electricity is needed to build a bamboo bike hence our resolve to use solar powered appliances in the future.



Scaling up

- Today, local and overseas demand for the bicycles far exceeds the initiatives' current supply.
- District Assembly and private sector in Ghana are promoting the technology
- SGP and Clinton Global Initiative University is providing technical support to upscale the pilot initiative for the international market.
- The Ghana Bamboo Bike Initiative is interested in exporting its environmentally-friendly bikes to Europe and the United States.



Awards

- 2010 SEED Award; 2012 Samsung Generations for Peace Award;
- 2012 UN Habitat/Dubai International Best Practice Award;
- 2012 World Business and Development Awards (WBDA)
- UNFCCC's 2013 Momentum of Change 'Women for Results' award
- Bernice Dapaah, Executive Director of BGCF, received recognition for her efforts in sustainable enterprise development with a focus on youth.



Lessons Learnt

- Bamboo plantations intercropped with cash/food crops gave improved yields and provided training in sustainable management bamboo for wealth creation
- The project has created community level environmental conservation, natural resource management, environmental responsibility and other activities to conserve and restore local ecosystem.
- It has strengthened and increased the export of bamboo bike frames to the international markets.
- Strengthened and promoted the use of waste from the bamboo use in bike production to produce bamboo charcoal briquettes to slow the rate of deforestation by reducing the dependency on fuel-wood.

Conclusion and recommendations

- Bamboo bikes can support sustainable rural transportation system
- The Youth who are daring should be encouraged to invest into this business
- The enterprise requires the acquisition of lathe and dropout making machines to manufacture our own dropouts, bottom bracket, head and seat tubes for the production of bamboo bikes.
- Each country can custom make the bamboo bike to suit the local conditions



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