



Bio-based alternative to wood charcoal

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What impact is intended?

In Ghana 80 % of the households are dependent on wood-based fuels for cooking. This leads to massive deforestation of 45,000 hectares per year for cooking fuels alone (about a third of all deforestation in Ghana). Once these forests are cut down, they are often not replanted or restored, contributing both to climate change and loss of natural resources in Ghana. This situation is common in other African countries as well.

Our objective is to prevent this deforestation in Ghana by creating a product ecosystem around an alternative cooking fuel that can grow in arid regions that are less-suitable for other plants. Furthermore, our alternative is ready for harvest in 5-12 months, which provides economic incentives for the land to be maintained and re-planted each year.

As a result of creating a profitable product ecosystem, we also solve several other problems. First, the purchase of charcoal is expensive, about 4% of income for a median Ghanaian salary. Our product aims to be 30 % cheaper than existing charcoal. Second, we will increase employment of women in Ghana, since farming will be largely done by women. Finally, as the product evolves, we would like to reduce the pollution caused by the product. Across the world there are millions of deaths every year from inhaling unhealthy smoke from cooking fuels. We believe there are opportunities to develop our product to cause reduced emissions.

What financial leverage can be realised?

According to UNDP (United Nations Development Programme, NAMA study) an average Ghanaian household of 5 people uses 2 kg charcoal daily (EUR 228 / year). With 1.8 million households using charcoal, this is EUR 410 million spent annually on charcoal. If we capture even 5 % of the charcoal market, we will have EUR 20.5 million in revenue each year. Furthermore, the market for charcoal in Ghana is growing from what it is today. Prices of charcoal in Ghana rise by 20 % each year due to increasing demand. We estimate that we can provide our product for 30 % cheaper than the current price of charcoal. Since Ghana is a low income country, we expect customers to be very price sensitive.

In the first year we expect to produce and sell an equivalent of 1,000 bags of charcoal, fulfilling the yearly need for charcoal of 67 households. The first year generates EUR 11,190 turnover. After successful production we expect to increase production to minimum of 2,000 bags of alternative charcoal (possibly 5,000 or more). We believe to be able to get to a capacity of 10,000 to 20,000 bags of charcoal per year minimum per farm / processing plant, resembling a value between EUR 111,900 and EUR 223,800. This will require an estimated 200 acres of land.

What are the strengths of this alternative cooking fuel?

While we aren't currently releasing the plant name for IP reasons, we have a working prototype that has been empirically tested in Ghana and shown promising results. The prototype is being used by potential customers without problems. The OPIN Foundation has experience setting up projects in Africa with over EUR 1 million in funding, and when combined with our founder's understanding of Ghanaian culture will create a set of skills which gear the project for success. Our testing is currently taking place from a pilot farm, 400 km north of Accra, Ghana.

What input is requested?

The requested inputs include:

- Connections to other experts on biomass in Africa
- Exposure in media/environmental organisations/policy makers/government (organisations)
- Access to labs and funding for health assessment and testing of energy content
- Starting finances