a) INTRODUCTION

EcoAct is a registered social enterprise established to address the challenges of plastic pollution, urban waste management, unemployment, deforestation and climate change. Our aim is to create a sustainable solution to the growing plastic waste menace, create an alternative to timber and create job opportunities. We use waste plastic as a resource to manufacture eco-friendly plastic lumber. These Eco-friendly building materials (Plastic lumber) made from recycled plastics are ideal for fencing on farms, homes, national parks, forest reserves and commercial places.

b) THE PROBLEM:

Solid waste management is one of the environmental challenges that many African cities are struggling to contain. As the population in most cities is growing so is the production of solid waste. In this equation, environmental friendly and sustainable measures to manage the waste are lacking. Tanzania is one of those countries caught up in this situation. Tanzania generates about 32 million plastic bags per month half of which end up in solid waste stream. Plastic bags constitute one of the greatest environmental challenges in most African countries. The situation in Dar-es-salaam City in Tanzania is not any different. The city is choking in solid wastes. Heaps of solid wastes can be found in uncontrolled haphazard locations within the business district as well as the residential areas. While both the city administrators and environmentalist recognize the health hazards and risks involved, the lack of economic and technological capacity has left the city dwellers and residents grasping for help. Landfill and burning is the most common method used in Dar-es-salaam.
c) **THE SOLUTION:**

In the midst of all these problems, we noticed that demand and price for timber posts was rising due to short supply. Up to 200,000 timber posts were sold in and around our capital city every month. If only we could produce an alternative to timber that was nearly as strong, longer lasting, cheaper and environmentally sustainable, we could profit from the lucrative timber market while helping to save Tanzania’s endangered forests.

Plastic waste provides the opportunity to create a better alternative to timber. Using plastic collected from the streets and landfills of our capital, our business uses a simple manufacturing technique known as injection molding to convert shredded and melted plastic into durable and environment-friendly posts. These posts are be sold on the market and used as fencing posts, sign posts and for building and construction purposes.

The business strategy is to create economic value on plastic at the points of generation to enable the households/farms/companies to sort and sell plastics in order to earn income. In this way, no plastic will find its way on to the streets. The plastics will be transformed into more durable plastic lumber and planks.

The business has a big social impact as it generates employment for individuals at the initial stages of the value chain, mostly youth and women, who collect, sort and clean plastic waste for reselling. By the 3rd year of operation, we aim to create 100 direct and over 500 indirect jobs.
d) THE INNOVATION:

We are involved in recycling these unwanted plastic waste that are thrown everywhere littering the streets, clogging sewers and encroaching people’s homes into aesthetic, durable and environmentally friendly plastic lumber. In addition to providing a solid waste management solution for the country, we provide an alternative to timber thus saving our forests. The posts are 6 to 10 ft in length, circular, 2 – 4 inches diameter, or square, 2 – 4 inches cross-section. They do not rot, are termite resistant, outlast timber in application and can be cut, drilled and nailed as easily as timber.

The posts are suitable for fencing on farms, homes, national parks, game reserves and commercial premises such as cattle ranches and tourist resorts. They can also be used as support beams for houses, cow sheds and garages. Smaller profiles can be used to make chicken houses, rabbit houses, cow sheds and garages.
As a green business our goal is triple fold; to recycle waste plastic and thus provide an alternative waste management solution to the plastic menace, to provide an affordable alternative to timber (To curb deforestation and reduce the effects of climate change) and to provide employment and thus a source of living to many unemployed youths.

As the world is emphasizing on reducing the effects of climate change, our project provides an alternative product to timber so as to conserve our forests & maintaining them as water catchments areas. Forests act as carbon sinks by removing CO2 from the atmosphere hence mitigating climate change. Our Plan is for coming three years to withdraw over 1 million kilograms of plastic from the environment and use them to manufacture plastic lumber and save an estimated 250 acres of forest (based on calculations by the Canadian Forestry Association). Plastic recycling also saves 2.5 kg CO2/kg plastic hence we will be preventing 2,500,000 kg of CO2 emissions further mitigating climate change.

- Environmental impact

All plastic lumbers are manufactured from post-consumer plastic and are 100% recyclable. Like this, 25 metric tons of plastic wastes are permanently withdrawn from the environment every month. Moreover, the plastic lumber offers an alternative fencing material to wood and therefore reduce deforestation. For every 25 posts sold, we save a fully matured Red Cedar Tree.

- Social Impact

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- Economic impact

Contracts with the residents and institutions to provide fencing posts will achieve significant earnings. Moreover, the our plastic lumber offer significant cost savings to buyers due to reduced maintenance and replacement requirements and their long durability.
f) THE MARKET AND BUSINESS MODEL

The total domestic fence market is approximately $1 billion per year with the synthetic fencing segment being $100 million per year with a historical 2% per year growth rate. Our goal, which is very achievable, is to capture two percent of the synthetic fence market, which is $1.5 million, by 2020. Keeping in mind that we only face a few competitors in fencing and our product is stronger and more durable, priced considerably less, and greener.

Customers

• **Companies** - Real estate developers, advertising agencies, domestic home developers, telecommunication infrastructure contractors, road contractors, wildlife conservation agencies and farmers.

• **Government** - the Tanzania government has this ambitious plan to fence off wildlife parks to reduce human/wildlife conflict. They are looking for more durable and affordable fencing poles.

• **Households/farmers** - there is high deficit in supply of wooden poles in the western region. This will reduce the long term maintenance cost for families and farmers.

g) PRODUCT COMPETITIVE FEATURES

An important feature of plastic lumber products is the fact that they last longer than traditional wood products. Moreover, due to the annual maintenance cost of staining wood based products (*materials, labor and time*); plastic lumber products actually cost less than wood products after approximately four (4) years.

Some of competitive features for plastic lumber include

- Eco-friendly product made from 100% recycled waste plastic.
- No chemical treatment.
- Does not rot and cannot be eaten by termites hence lasts longer.
- Do not splinter.
- Outlasts timber in application.
- Can be cut, drilled and nailed just as easily as timber using the same wood working tools.
- Won't be stolen for use as firewood as is currently happening in many parts of our country.
- Offers long term cost effectiveness due to reduced maintenance and replacement.
- Has an aesthetic look, with a regular shape and a smooth and/or timber-like finish.

h) AWARDS AND RECOGNITION

May, 2015 I was nominated as Africa Achievers Awards 2015 Nominee, Later September, 2015 was named as “New York Forum Africa 2015 Top 50 Most Innovative Start-Up Companies in Africa” by New York forum Africa, and October 2015 emerged as a first runner up in Seed Stars World Tanzania awards competitions for Start Up Companies.