



**ACACIA**

RECYCLING

by Acacia Foundation

**BOTTLE TO BOTTLE**

A new era for plastic recycling





## ABOUT

# WASTE TO TREASURE.

A deficiency in environmental sustainability awareness, combined with an inefficient plastic waste handling mechanism, has seen millions of plastic bottles end up in landfills and water catchment areas. This has inadvertently clogged drainage channels in and around the city, contributing to the rampant floods we have witnessed lately. In addition, improperly discarded plastic bottles have ended up in lakes and rivers, causing dire harm to marine ecosystems.

Acacia Foundation has an effective solution to mitigate plastic waste pollution in Uganda through its various multi-pronged actions:

- large scale recycling of plastic bottles;
- community environmental sensitization programs;
- agreements with institutions for organized collection of plastic waste.

## TOWARDS A 100% RECYCLED PLASTIC SYSTEM

Acacia Foundation, a non-profit company limited by guarantee, is the first of its kind in Uganda to implement the “rPET bottle-to-bottle recycling system” that is commonly used to make a variety of new plastic products, notably bottles and food containers.

**Bottle-to-bottle recycling requires the highest standards in terms of decontamination and food safety in order to offer products of excellent quality.**

### We are certified by:

- UNBS ISO 9001:2015
- UNBS ISO 22000:2018.

Acacia has a circular-economy business model in place, which allows it to avoid the production of bottles from virgin plastic, in so doing, reducing the accumulation of plastic waste. It operates on the perennial cycle of packaging which is a sustainable model, vastly beneficial to society and the environment.





## VISION

# A CIRCULAR ECONOMY WHERE PLASTIC NEVER BECOMES WASTE.

A recent report from the National Environment Management Authority (NEMA), noted that Uganda produces up to 600 metric tons of plastic a day with only about 6% of plastic waste collected for recycling. Much of plastic, more specifically Polyethylene Terephthalate (PET), which is the plastic mainly used for bottles, is not properly processed for recycling. As beverage companies continue to produce more vPET (vPET is virgin PET, rPET is recycled PET), an even greater amount of plastic is discarded into the environment, leading to numerous health and ecological concerns.

Uganda, once described as the pearl of Africa, is beautiful beyond compare and ranks among the top 10 most biodiverse nations on the globe. More than half of all Africa's native birds and 13 different primate species call Uganda home. Based on the World Bank projections, the population of Uganda will more than double from 46 million to over 100 million by 2060. The rising population has brought about an increase in aggregate demand along with higher levels of plastic consumption. Large booms in population also bring along greater strain on waste management systems however, it also creates an opportunity to formalize more sustainable waste management and recycling practices.

**« Our vision is a world in which we protect nature effectively and use our resources responsibly, a circular economy for plastic in which it never becomes waste »**



## VISION

# **BUILDING A BOTTLE-TO-BOTTLE RECYCLING SYSTEM IN UGANDA IS POSSIBLE AND IT HAS ALREADY BEGUN.**

European Green Deal highlights the importance of recycling for climate neutrality by 2050. Polyethylene terephthalate (PET) is considered to be the most promising food-packaging plastic for recycling because of its ability to absorb post-consumer contaminants at much lower levels compared to other plastics. Our adherence to health and safety protocols has allowed us to meet the European Food Safety Authority standards enabling us to produce recycled PET, safe for food grade packaging. Our recycled products are currently in use by some of the largest multi-national companies.

Globally, several environmental sustainability initiatives have been put in place and various private sector companies have pledged to increase recycling rates and recycled content in their products. The EU has set a target of 65% recycling of all plastic waste by end 2025 and 70% by end 2030 while the United States Environmental Protection Agency has set a recycling rate goal of 50% by 2030. Major brands such as Coca-Cola, PepsiCo, Danone and Nestlé have signed up to global commitments, while some brands are already achieving 100% recycled content in PET bottles.

**The development of a circular economy model for the recycled PET market in Uganda and in East Africa is possible and it has already begun. A circular economic model aims to minimize the introduction of new raw materials and to maximize the reclamation and re-use of already existing resource inputs.**



## MISSION




# A SMART CYCLE.

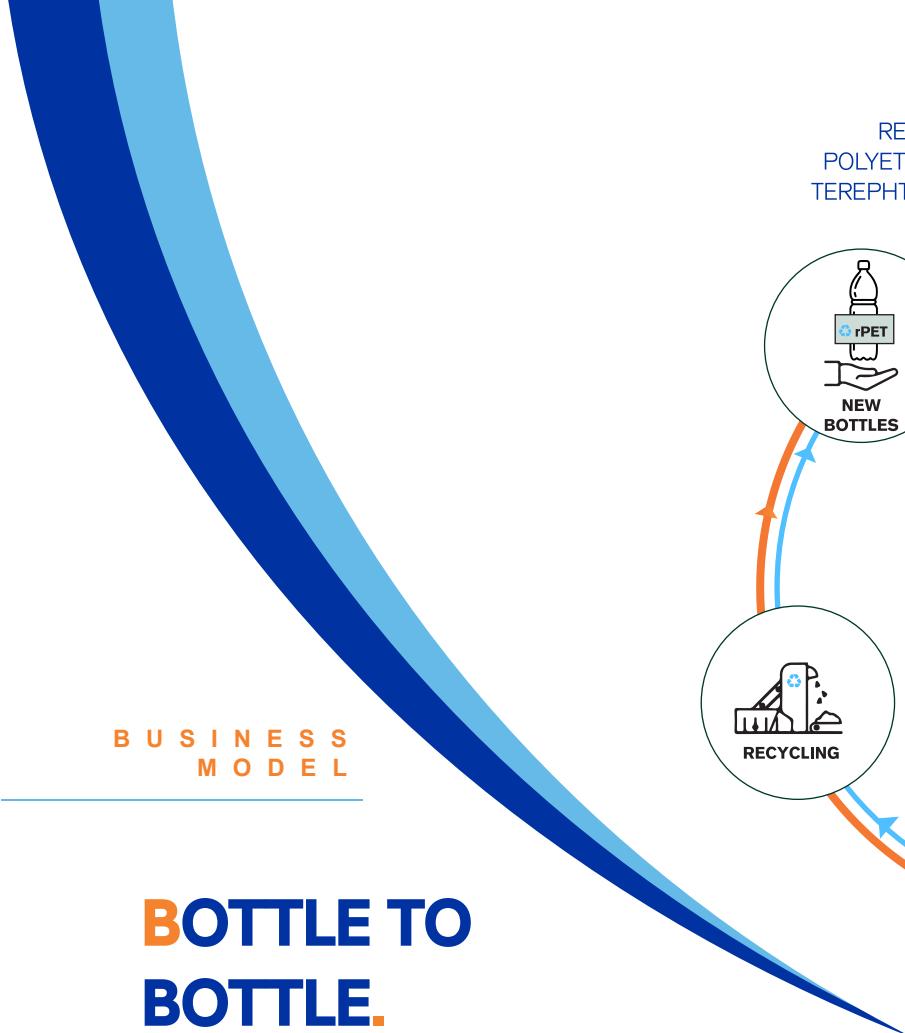
Because it is lightweight, resistant to impact, naturally transparent and colorless, PET is the plastic material largely used in the food industry for water bottles, oil, milk, juices and packaging of other beverages. This is because it is safe, retains the characteristics of the liquid contained and is hygienic.

Furthermore, the PET bottle is an eco-friendly choice as it is easily recyclable.

**« Acacia Foundation's mission is to directly manage the end-of-life of collected PET plastic bottles, making them part of a circular economy model. »**

The objectives of Acacia Foundation are to:

-  increase the collection and recycling levels of plastic bottles, bringing the world of production, consumption and recycling closer together in an innovative way;
-  create the Ugandan 'bottle-to-bottle' supply chain by producing recycled plastic, suitable for direct food contact and for the production of hygienic, safe and unbreakable bottles;
-  acquire all the knowledge and tools to properly align with recent international standards on the use of plastics.



**rPET**  
RECYCLED  
POLYETHYLENE  
TEREPHTHALATE

**PET**  
POLYETHYLENE  
TEREPHTHALATE



**BUSINESS  
MODEL**

# BOTTLE TO BOTTLE.

When every single PET plastic bottle reaches the end of its life cycle, it can be recycled and reintroduced into the economic system, creating new value for consumers, companies and safeguarding the environment.




Which bottles can enter the bottle-to-bottle cycle?





The Acacia Foundation production site covers an area of 80,000 square meters, including 55,000 square meters of warehouses for recycling, production and storage of plastic bottles.

### THE STEPS IN THE BOTTLE-TO-BOTTLE PRODUCTION PROCESS.

-  Used plastic bottles are delivered to our collection facility where they are pre-sorted. The bottles are then compacted into bales and stored in our warehouses.
-  The bales are then transported to Acacia's recycling plant where they go through our hygenization chambers and afterwards, are sorted by colour (clear, blue, green, brown). Thereafter, they are processed into flakes. Subsequently, the flakes pass to the extrusion stage; the final product obtained is resin which is in granule form (rPET). The resin granules are stored in the warehouse waiting to be used in the production of new bottles.
-  Resin from recycled bottles is mixed with virgin resin (currently, 50% recycled PET + 50% virgin PET), and processed to obtain new, ready-to-use plastic bottles. Caps to go along with the bottles are also produced at our plant. The new bottles are packaged in bales awaiting domestic and export shipment.





IMPACTS

## RECYCLING MEANS PROTECTING THE ENVIRONMENT.



### Less environmental impact

The use of rPET for the production of new bottles reduces use of raw materials and lowers CO<sub>2</sub> emissions.



### More cost saving

Recycling avoids the constant consumption of new virgin plastic and consequently lowers global production costs.



### A better quality of life for communities.

The mitigation of plastic pollution improves the livelihood of cities and villages, restoring healthy condition for people's wellbeing.

In recent decades, the production and consumption of plastic in Uganda has exploded.

In 2018 alone, Uganda imported **\$385.5 mln** of plastic, which equated to approximately **210,000 tons.** Uganda only collects **~6%.**



Each year, approximately

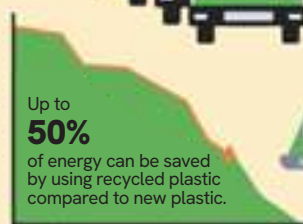
**195,000 tons**

of plastic are left in the Ugandan ecosystem, leading to significant environmental degradation.



**100%** is the share of recycled plastic ACACIA aims to achieve in all of its plastic bottles by 2025.

Up to **50%** of energy can be saved by using recycled plastic compared to new plastic.



**Up to 90%**

less CO<sub>2</sub> is emitted by recycling plastic compared to the production of new plastic.





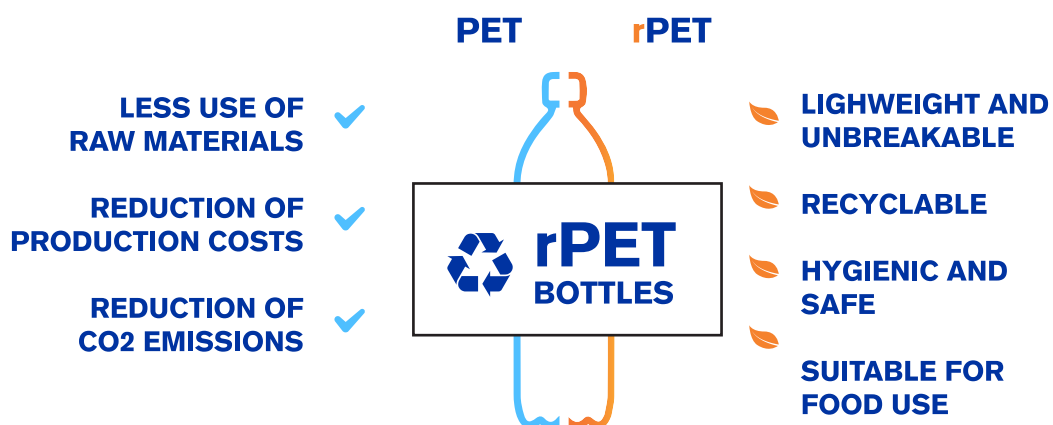
## RECYCLED PET BOTTLES: HYGIENIC, SAFE AND UNBREAKABLE.

With our high tech machinery, new bottles are produced with a percentage of recycled PET (rPET) however, they also retain the same characteristics as virgin PET (vPET) bottles, both in terms of hygiene, safety and packaging strength.

**Percentage of rPET used in bottle production by ACACIA FOUNDATION:**

- ✓ Current stage: migration from 25% rPET to 50% rPET
- ✓ In the near future: migration from 50% rPET to 100% rPET

*Owing to new technologies available, Acacia is aiming at producing new bottles with 100% recycled PET plastic. This will allow the circular economy to be fully developed in Uganda.*





## FIGURES



**Target market:** bottles produced by ACACIA FOUNDATION are exported to all countries in the East African Community (EAC).





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