

ENDEV SUMMMER ACADEMY

Case: Biomass Sub-sector in Uganda

Nolbert Muhumuza

- *Biomass Energy Efficient Technologies Association.*
- *Awamu Biomass Energy Ltd.*

31.08.2018

The logo for Awamu Biomass Energy features the word "awamu" in a lowercase, rounded, teal font. The letter 'a' is stylized with a small yellow square at its base. The word "BIOMASS ENERGY" is written in a smaller, uppercase, teal font directly below "awamu".

BIOMASS ENERGY

Biomass = organic matter (*used as fuel*)

➤ *classed as a renewable energy source*

- *contains stored energy from the sun*
- *releases energy when burned*
 - *also releases carbon emissions*



Solid Biomass

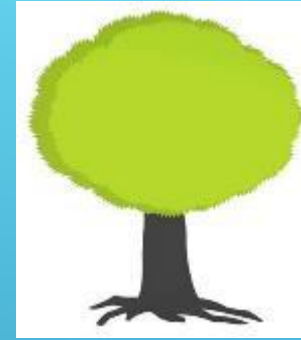
Natural state:



Grasses



Crops



Wood

Residues:



Forest residues



Mill residues



Crop residues

Processed:



Briquettes



Pellets

Liquid fuels

Bioethanol:

(Starches from wheat, corn, sugar cane, molasses, potatoes, other fruits)



Absolute (~95.6%)



Denatured (methylated spirit)

Biodiesel:

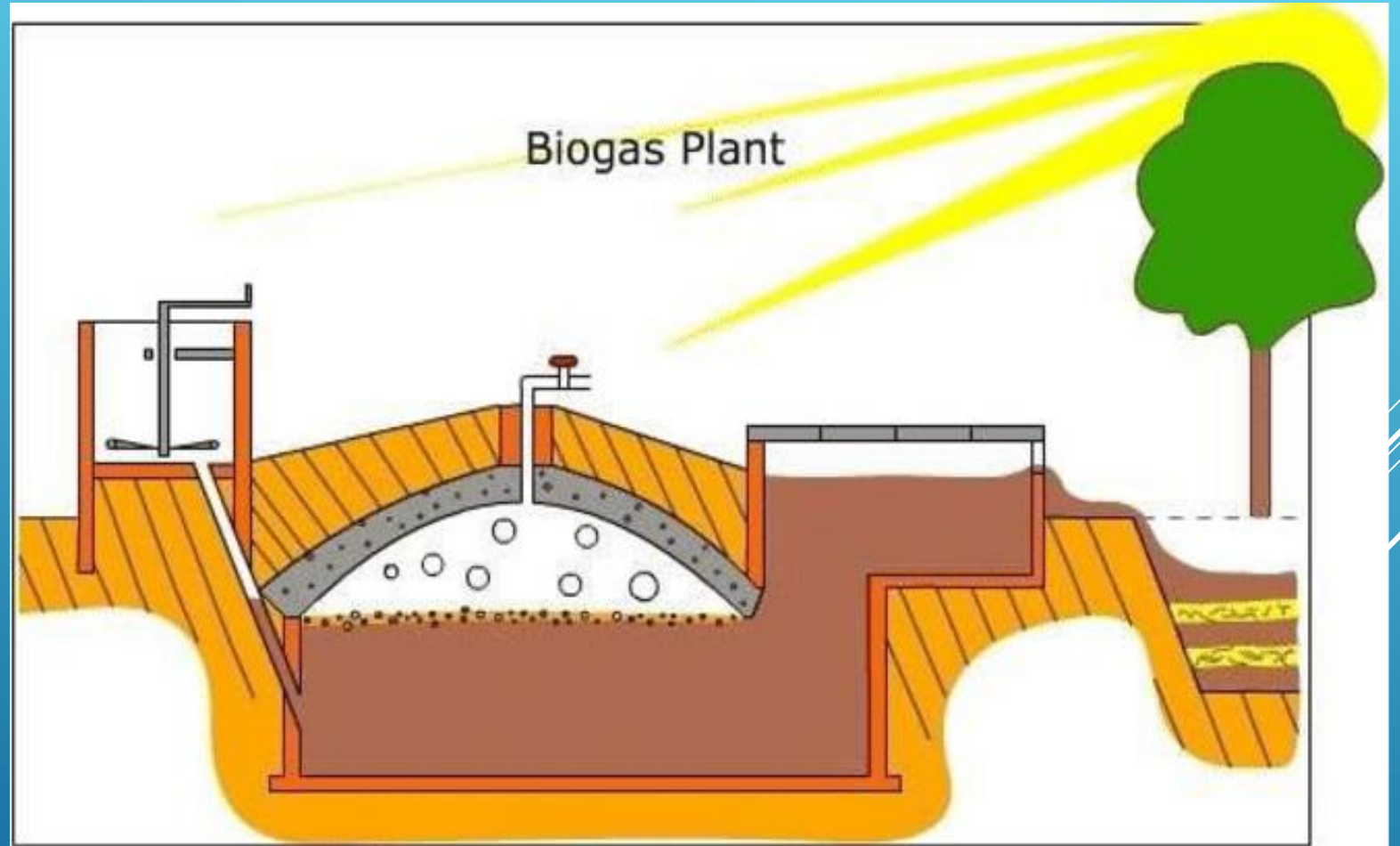
(Vegetable oil, nuts oil and algae)



Biogas

decomposition of organic waste in the absence of oxygen.

(from raw materials such as agricultural waste, manure, municipal waste, plant material, sewage, green waste or food waste)





- ▶ Not-for-profit
- ▶ Membership organization
- ▶ Formed in **2011**
- ▶ Has over **80 members** (ICS & Biofuels)
- ▶ Mission: to promote biomass energy efficient technologies and conserve the environment.



Stoves

Household



Stoves

Institutional



Biofuels

Briquettes



Biofuels

Briquettes



awamu

BIOMASS ENERGY

WWW.awamu.ug // [FACEBOOK: /awamubiomass](https://www.facebook.com/awamubiomass) // [TWITTER: @awamubiomass](https://twitter.com/awamubiomass)

Our Journey



2008



2011



2012



2013



2014



2014



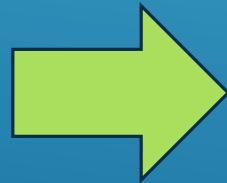
2015



2018



2018



2018

Problem



20km weekly

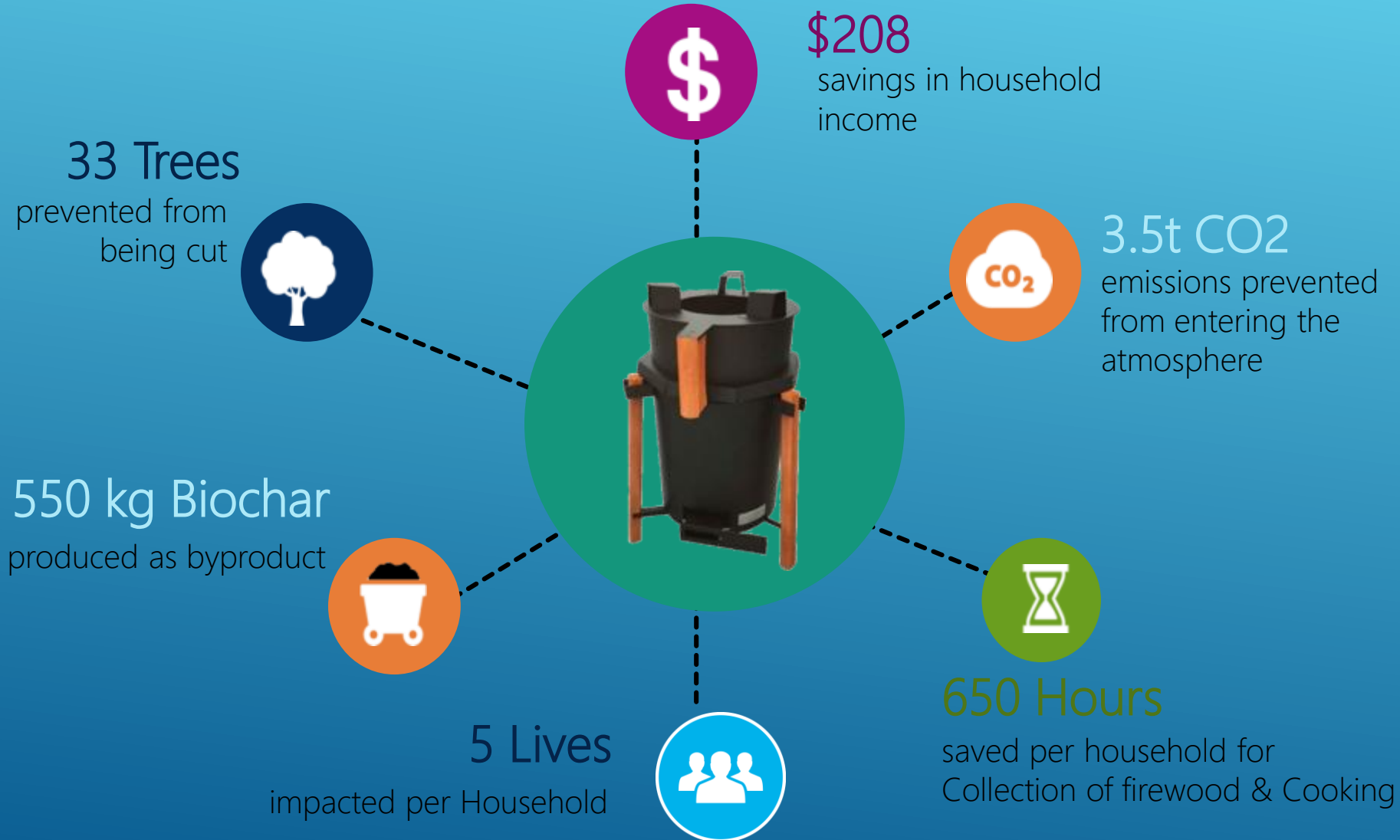
5 Hours spent cooking

110 Tons of firewood annually

20,000 Ugandans die indoor emissions (**86%** children)

Solution

Awamu stoves has annual **Triple Bottom Line** impacts



Impacts

- 5,600 Sold
- 8 Direct Jobs
- 18 Distributors (~25 additional jobs)
- 6 Replications (4 Countries)

Time
Saved



Hours

2.4 million

Lives
Impacted



50,000

Money
Saved



USD

\$780,000

Trees
Saved



150,000

Carbon
Emissions
Avoided



tCO₂e

13,000

Team



Nolbert Muhumuza
CEO, Social Entrepreneur

Paul Anderson
CTO, Biomass Stoves Expert



Board of Advisors (3):
Finance & Taxation | Production | Entrepreneurship



5 Full-time Staff: Production, Sales & Admin inc. 2 Female
3 Part-time Staff: Production & Sales inc. 1 Female

Partners



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