



# THE EXCITING WORLD OF FAECAL SLUDGE RE-USE

## Exploring turning poop into gold



**8TH JULY 2020 - 8.30 TO 13.00**

**9.30-10.10  
Animal Feed**

**10.15-10.55  
Biomass Fuels**

**11.00-11.40  
Compost**

**11.45-12.30  
Electricity/Biogas**

**Join us on ZOOM**

**Meeting ID 852 0231 3363**

Block 3:

# CO-COMPOST



Photo credit: ERAS



**From Garbage to Cabbage**  
**Presented by Edwin Kamau**  
**Managing Director ECoHoldings**

# PROBLEM

## Solid waste management



- Urbanization: waste management problem **3,000Mt/day** Nbi
- Methane emissions **570,758.4MT CO<sub>2</sub>E/year** <https://www.epa.gov/warm>



## Feacal sludge management



- Informal settlement **no sewer** (36% in Nbi) [wsup.com](https://www.wsup.com)
- Sewer treatment plant **few & don't cover** every place



# OUR SOLUTION



ECoH provides organic based solutions for recycling of both food and market waste into organic fertilizer within **24hrs** so as to enhance soil health for increased food production in a **sustainable and environmental friendly** way that encompasses a **Green and Circular Economy**.

## RECYCLE Food & Market waste

All organic waste segregated for recycling



Zero organic waste to dumpsite

Consistent and reliable farm produce



20-30% increase food production



**YAD® BIO-VITALIZER**  
(Organic fertilizer)

**24Hr Composting technology**



Zero Methane emissions (Aerobic)



## From Garbage to Cabbage

# PRODUCTS

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**YAD® BIO-VITALIZER** is an organic fertilizer that **rejuvenates** our soils to enhance crop production, while still fertilizing the crops.



**ECoH WT®** is a liquid concentrate of natural beneficial enzymes that **breakdown organic matter** to eliminate pollution & enhance water quality.



**24Hr Composting machine** recycles organic waste into a resource, organic fertilizer. The composting machine, **composts**, **sterilizes** and **dries** the organic fertilizer, thus readily available for farm use



# RESEARCH & DEVELOPMENT

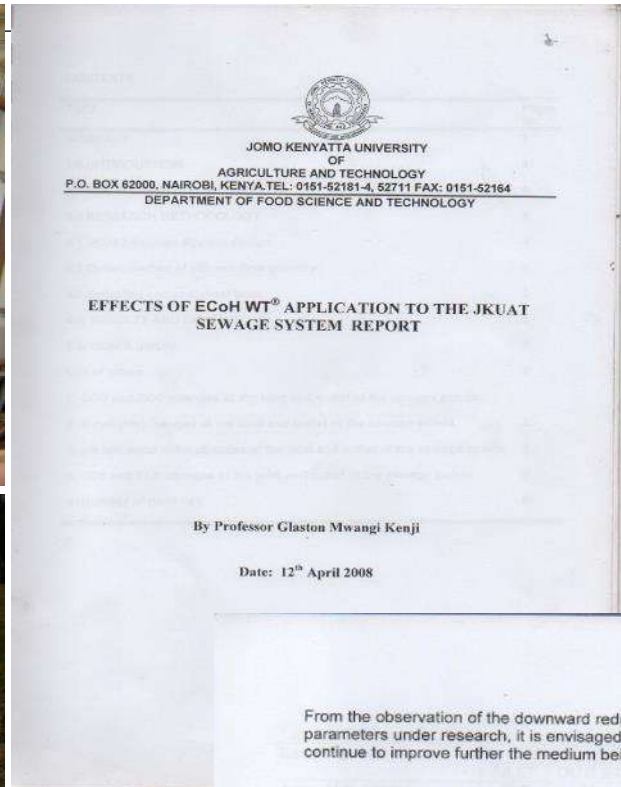


Table 1: COD and BOD changes at the inlet and outlet of the sewage ponds

Sampling date	COD (mg/L)		BOD <sub>5</sub>	
	INLET	OUTLET	INLET	OUTLET
June, 18th 2007	600	96	350	64
July, 23rd 2007	316	88	224	58
August, 20th 2007	288	84	110	32
September, 17th 2007				
% reduction	52	12.5	68.6	50

Table 2: E-coli (cfu) changes at the inlet and outlet of the sewage ponds

Date of sampling	INLET	OUTLET
June, 18th 2007	$4.6 \times 10^7$	$5.0 \times 10^5$
July, 23rd 2007	$9.0 \times 10^7$	$1.3 \times 10^5$
August, 20th 2007	$3.0 \times 10^7$	$1.0 \times 10^2$
September, 17th 2007	$2.8 \times 10^3$	$7.0 \times 10^1$
%reduction	99.994	99.986

Table 3: pH and pond color changes at the inlet and outlet of the sewage ponds

Date of sampling	pH Value		Color of the ponds	
	INLET	OUTLET	INLET	OUTLET
June, 18th 2007	7.36	7.05	Cloudy	Slightly cloud
July, 23rd 2007	6.63	7.14	Cloudy	Clear
August, 20th 2007	7.31	7.10	Cloudy	Clear
September, 17th 2007	6.90	7.90	Cloudy	Clear

From the observation of the downward reduction trend on the effluent discharge parameters under research, it is envisaged that long term of use ECoH WT® will continue to improve further the medium being dosed.

## 5.0. CONCLUSION

The incorporation of ECoH WT® in effluent treatment system provides an alternative option for consideration in waste management. Being a biological product, it will be suitable for incorporation into both solid and liquid waste to benefit from the properties noted. Due to the impact noted on E-coli reduction, ECoH WT® will be safe as a medium to improve the quality of water because it does not add any harmful microorganisms.

# WASTE HANDLING LANDSCAPE



## Organic matter:

Nairobi – 3,000Mt/day of water dumped  
36% of population live in informal sectors – no sewer

## Opportunity:

80% population live on farm  
About 2m Mton fertilizer imported (USD 400M)

# PROS & CONS

## Pros

- Eliminate **methane** emissions
- Compost in **24Hrs** (both food waste & fecal sludge)
- **Little** space utilization
- **Sterilization** - 95degrees operation temp
- **Customized** for client need
- Short **ROI**
- **Attainment of the SDGs**

## Cons

- High initial **capital** outlay
- **Electricity** requirement\*\*\*\*



'Machine can be sized to client's need, as you can see my colleague Joseph inside a 5ton machine while on the left is 50Kg machine



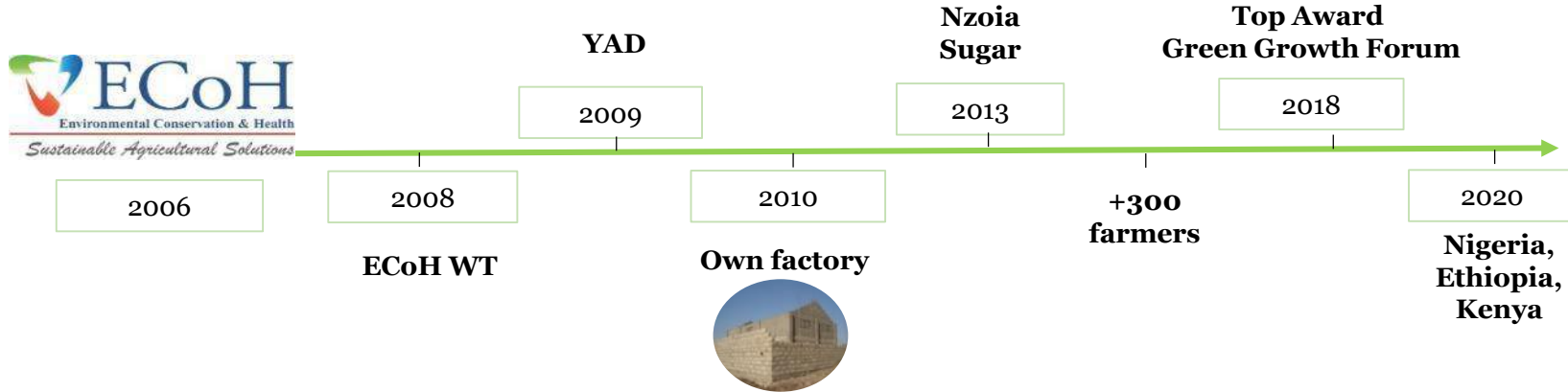
# IMPACT



**'My fruit trees are now producing in clusters, as you can see this is a cluster of 9 oranges', Mr. Titus Kitonga, Marion Farm, Makueni**



# TRACTION & PARTNERS



## Government Agencies

## Research

## NGOs and Associations

## Institutions

## Investors

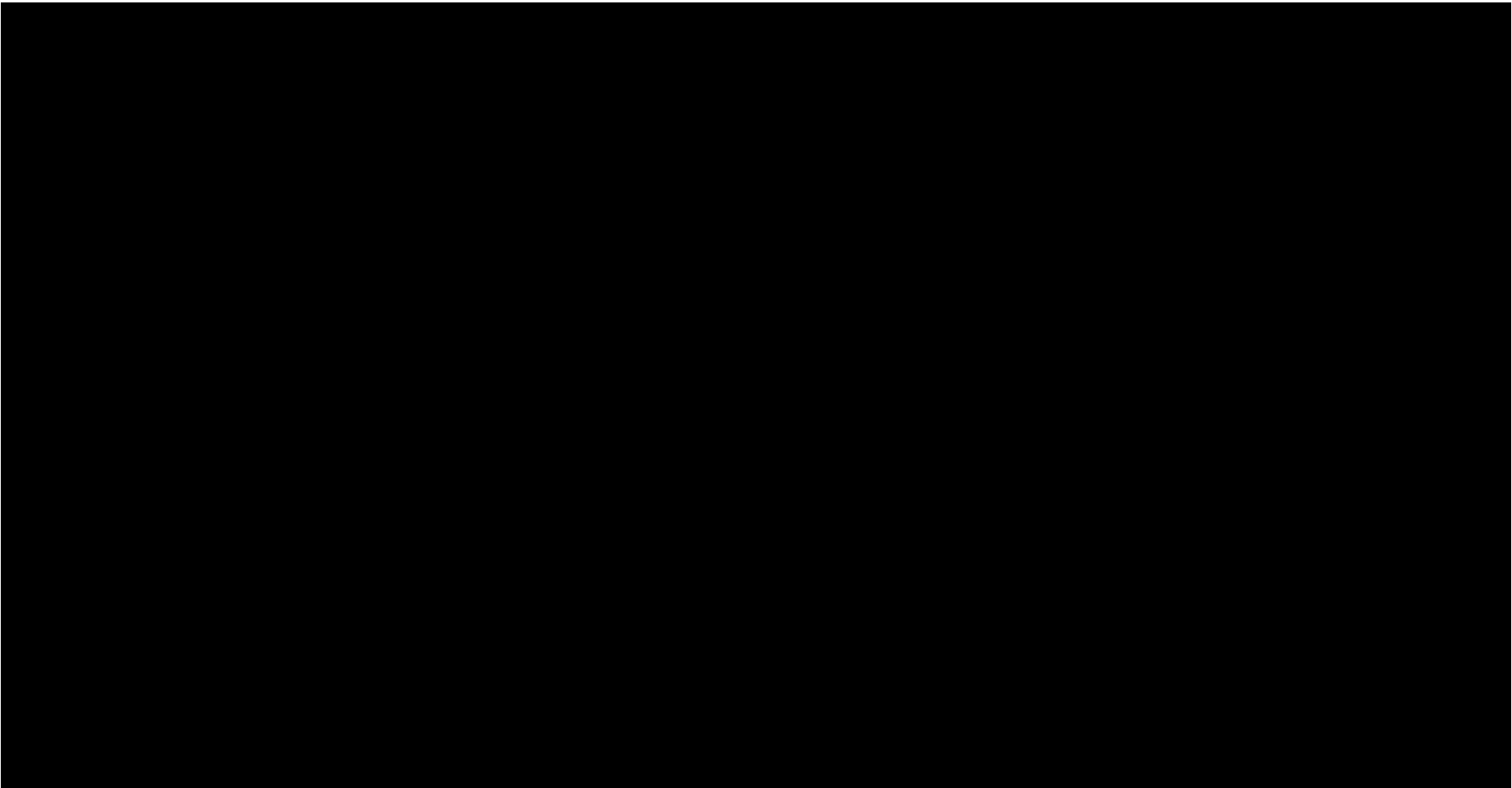


MINISTRY OF ENVIRONMENT AND FORESTRY



The Council of Governors  
All Governments, 1 Voice





# CONTACTS

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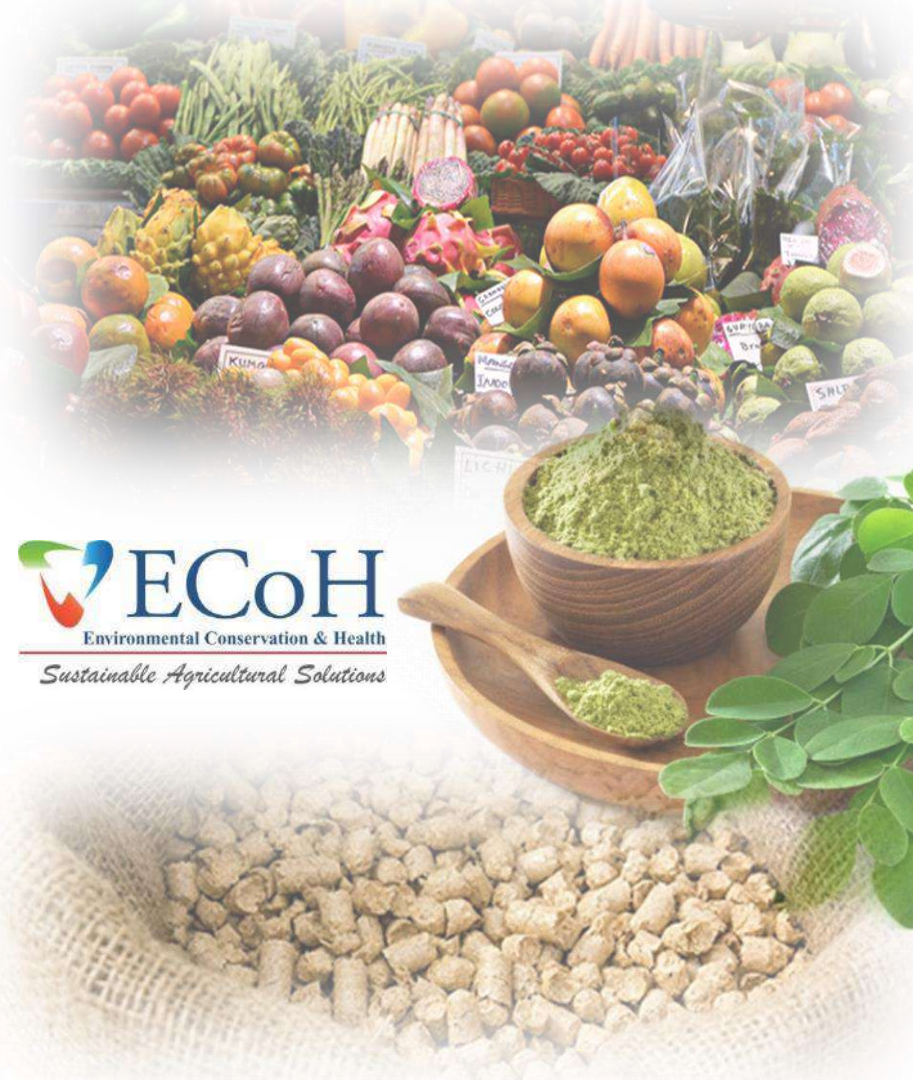
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# Q&A

## CO-COMPOST



# EXPERIENCE WITH CO-COMPOSTING

## KUSHTIA MUNICIPALITY, BANGLADESH

Shahriar Bin Rasul  
Managing Director ERAS



# ERAS – ACTIVITIES IN KUSHTIA MUNICIPALITY, BANGLADESH



# ERAS – ACTIVITIES



# ERAS – ACTIVITIES



# ACTION RESEARCH



# CHALLENGES & OPPORTUNITIES



# Q & A CO-COMPOST



SNV

THANK YOU  
FOR  
JOINING US!



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