TURNING HUMAN FAECES INTO RESOURCE IN KENYA INFORMAL SETTLEMENTS

BY:
Aidah Binale-Ebrahim

Umande Trust

"Innovative Solutions: Sustainable Communities"

Back ground

- Kenya population is 46Million, with 12Million residing in urban areas
- 60% of the population live in the informal settlements
- Limited sewerage coverage
- Unhygienic practices (80% pit latrines)
- Unclear regulations, bureaucracies and inflexibility on FSM

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Our Approach

- Community owned and managed facilities
- A toilet is more than a sanitation facility: information, energy, carbon reducing, water conserving, social, economic and democracy
- Human waste is an investment
- Sanitation financing for local development initiatives for sustainability
- Partnerships to scale up urban sanitation services

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Bio-centres Model

- Bio-centres apply bio-digesters that convert human waste into bio gas and bio-slurry
- Based on a build transfer model
- Community groups are trained how to operate, manage and invest from proceeds
- The facilities stimulate economic development through other enterprises (60:30:10)

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DESIGNING, MODELLING AND CONSTRUCTION

Site selection, designs, excavation and foundations + Training of community artisans

Community, professionals and UT

Dome and super structure construction

Community, professionals and UT

Complete structure and use of biogas

Community and UT


Fellowship
With us
EVERGREEN AUTO
M-PESA
PUBLIC TOILET
GENTS
LADIES
EQUITY


OBUNGA BIO-CENTRE
COMMUNITY DEVELOPMENT INITIATIVE
UMANDE TRUST
SANA
KIMASCO
MCK


ST CHRISTINE COMMUNITY CENTRE

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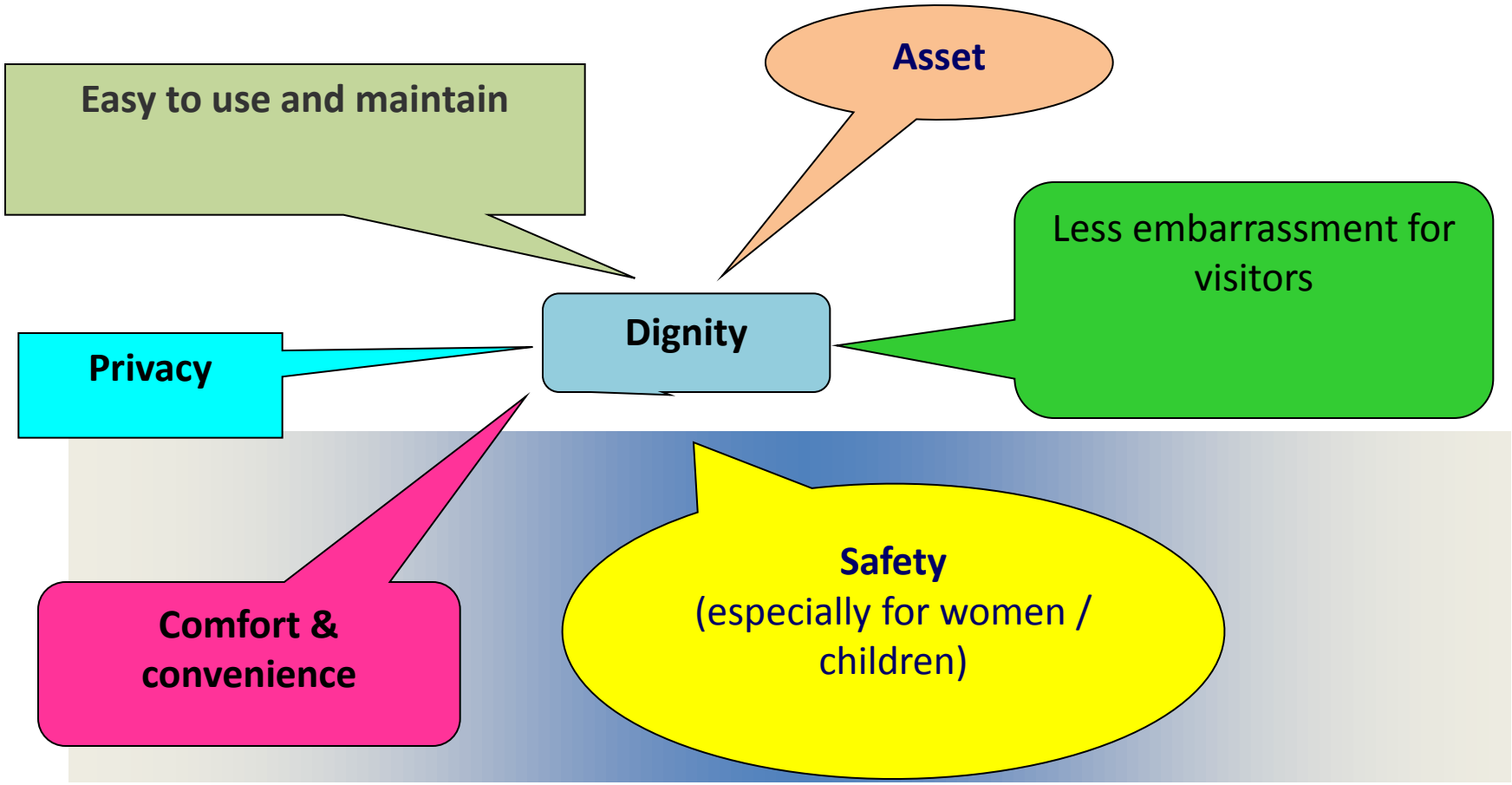
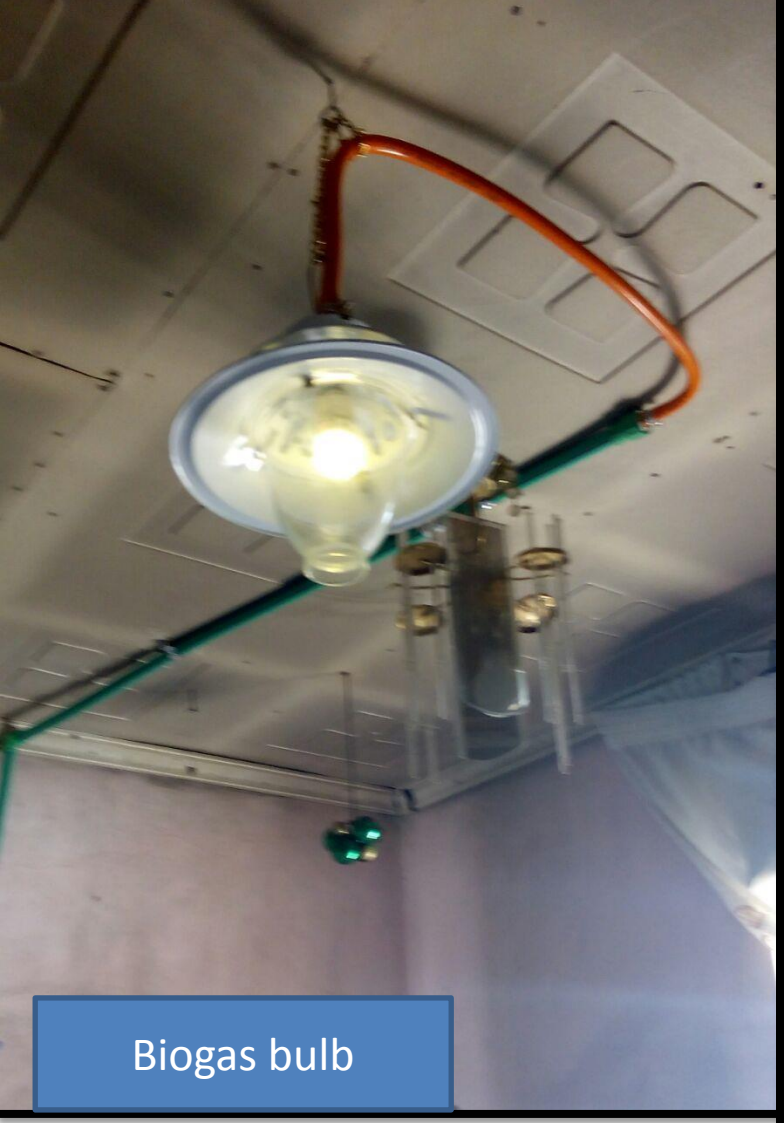
88 Facilities serving 44,000 people p/d (5,000 HH toilets in Nakuru)

The Bio-Centre Benefits





Biogas bulb

Biogas burner

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Biogas Bunsen burner

The Bio-Centre and Climate Change

Bio-centres convert Human waste into bio-gas and organic fertilizer.

Communities cook using the bio gas,

A bio Gas burner in a bio center

Summary

- Timeframe for the facilities is between 3-6months
- The bio-centers pay 12,000 KES and HH pay KES. 6000 per evacuation (full and KES 300 per bucket)
- Households willing invest upto KES.500 to use biogas for cooking and lighting
- Tenants will pay more for good services
- Farmers shy from using manure from human waste
- Local hotel businesses and schools are more receptive to using biogas

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Challenges/Lessons Learnt

- Bio-centres face challenges caused by high pressure for sanitation services
- The socio-cultural acceptance of use of the bi-products continues to be a challenge
- Packing the biogas into user friendly containers has been a technology challenge
- Resources required to pressurize and containerize biogas and palletization into fertilizer is very expensive
- Partnerships are key for greater impact

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Cont.

- Gulper and rammer solution for some areas in different counties
- The costs of sludge transportation are often a barrier thus it is desirable to optimize travel time from source to treatment
- Lack of goodwill from policy makers/service providers to promote onsite technologies
- Policies that promote use of biogas and bio-slurry from human faeces

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Prototypes in Nakuru

Future Plans

- Partnerships to have more household options and products
- Research and pilot containerisation of biogas
- Approved transfer points for sludge operators
- Standardization of products
- Approval and adoption of technologies by Governments (Scaling up)
- Approval of sanitation tarrifs

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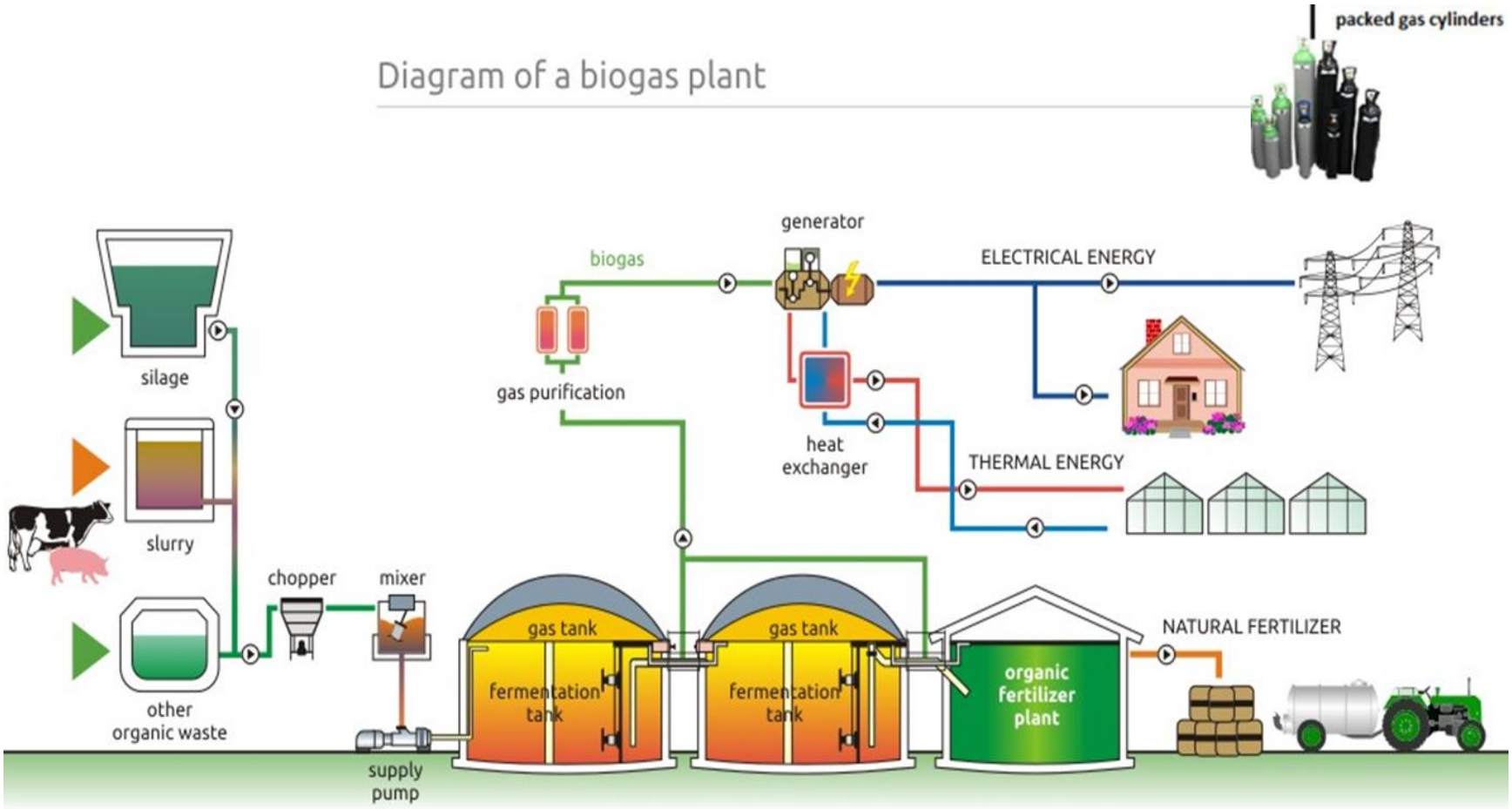
Can we make this a reality?



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Website: www.umande.org
Email: info@umande.org