


A Business Approach for Improved Sanitation in Ghana – Organic Fertilisers and Energy as Drivers (Ashaiman –Ghana)

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Ministerie van Buitenlandse Zaken

PROJECT RATIONALE

- Provision of Sanitation on a firm business model
- Provision of environmental sanitation for slum dwellers
- The Ghana Government recognises that Environmental Sanitation is a powerful driver of human development in terms of improving health and increasing wealth
- Weak capacities of MMDAS to tackle sanitation

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Project outcomes

- Increased access to improved sanitation
- Increased private sector investment in affordable municipal-level anaerobic waste treatment approach
- Enabling regulatory framework for accelerated national access to bio-fertilisers and energy
- Improved knowledge on sustainable and replicable business models for combined FS / organic waste re-use

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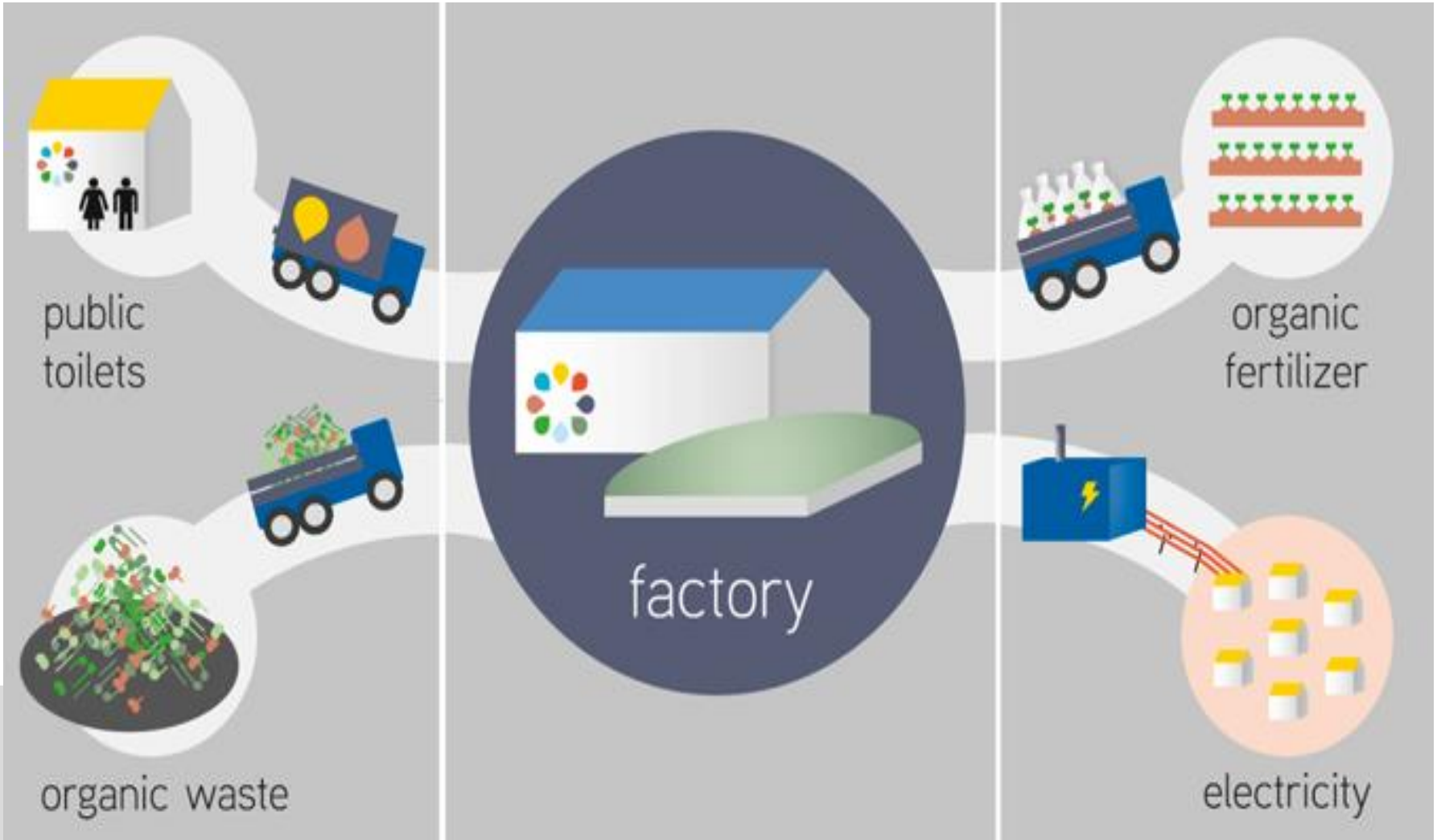
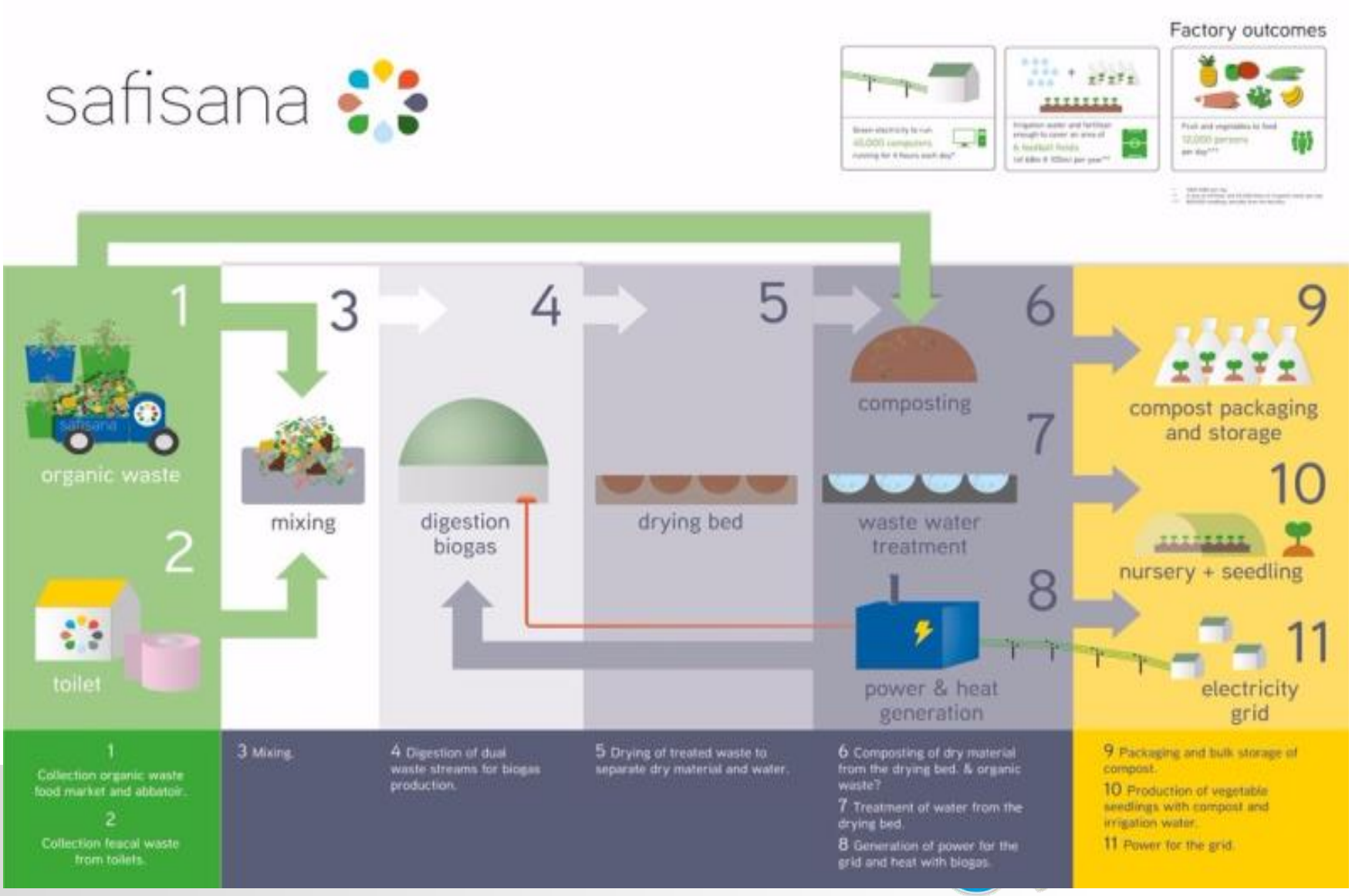
Project Input and output



Construction factory

Achievements so Far



Waste water treatment pond

Sources of waste water

- Leachate from drying bed (20M3/day)
- Rain water captured by drying bed
- Rain water captured by the WWTP
- Waste water from the washing/cleaning area

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Quantities of waste water

- Each drying bed unit is filled with 84 m3 of effluent from the digester every 2.3 days.
- About 20 m3/day of wastewater is expected mainly as leachate from all drying beds.
- The area of drying beds is 2,590 m2. The daily rainfall intensity is 40 mm/day. Assuming that there will be 100% collection efficiency, then the total amount of rainwater captured by drying beds is 104 m3

Rain water from DB and WWTP

Rainwater captured by drying beds		
Parameters	**Value**	**Unit**
Area of catchment	2,590	m^2
Daily rain fall intensity	40	mm/day
Efficiency	100	%
Rainwater captured	**104**	**m^3**
Leachate + rainwater capture	**124**	**m^3**

Parameters	Value	Unit
Area of catchment	2,100	m^2
Daily rain fall intensity	40	mm/day
Efficiency	100	%
Rainwater captured	**84**	m^3

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Installation greenhouse for vegetable seedlir

Greenhouse 400m2

Plant beds under construction

Kenny – first trials seedlings and irrigation system

Seedlings produced with compost and waste water

Power to grid installation

Switch board
checks by supplier

CHP installed and
operational 100KW

Connection to grid and main
meter

First kWh’s supplied to grid!

Dash board CHP –
measuring first

Operations

Intake food waste from markets

Mixing pit (faecal and organic waste) + macerator + digester

First compost batch

Generator container and grid swichboard shed

Solid waste intake and sorting

Training and hygiene promotion

Training of toilet operators

Training of Vendors

Hygiene promotion market queens

Training of operations by Waternet

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Office, knowledge centre and laboratory

New solar panels at office 3.5 kWh (peak)

Landscaping front office

Compost storage, greenhouse and knowledge centre

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Lessons learnt so far

- A huge in-balance between demand and supply
- Obstacles to scaling up
- Very limited funding options for municipalities
- Need for tangible political commitment
- Increased community engagement is key
- Management of people's expectations.

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Visit by the president of Ghana

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Visit by the Minister of Env't