



Mlu Mnguni  
IFAT - AFRICA 2017

# SLUDGE AS A RESOURCE: ENERGY, NUTRIENTS AND ENVIRONMNET



# Outline

Background

Sludge Management

Wastewater Sludge

Darvill Case: Energy, Nutrients and Environment

Conclusion



## Problem Statement:

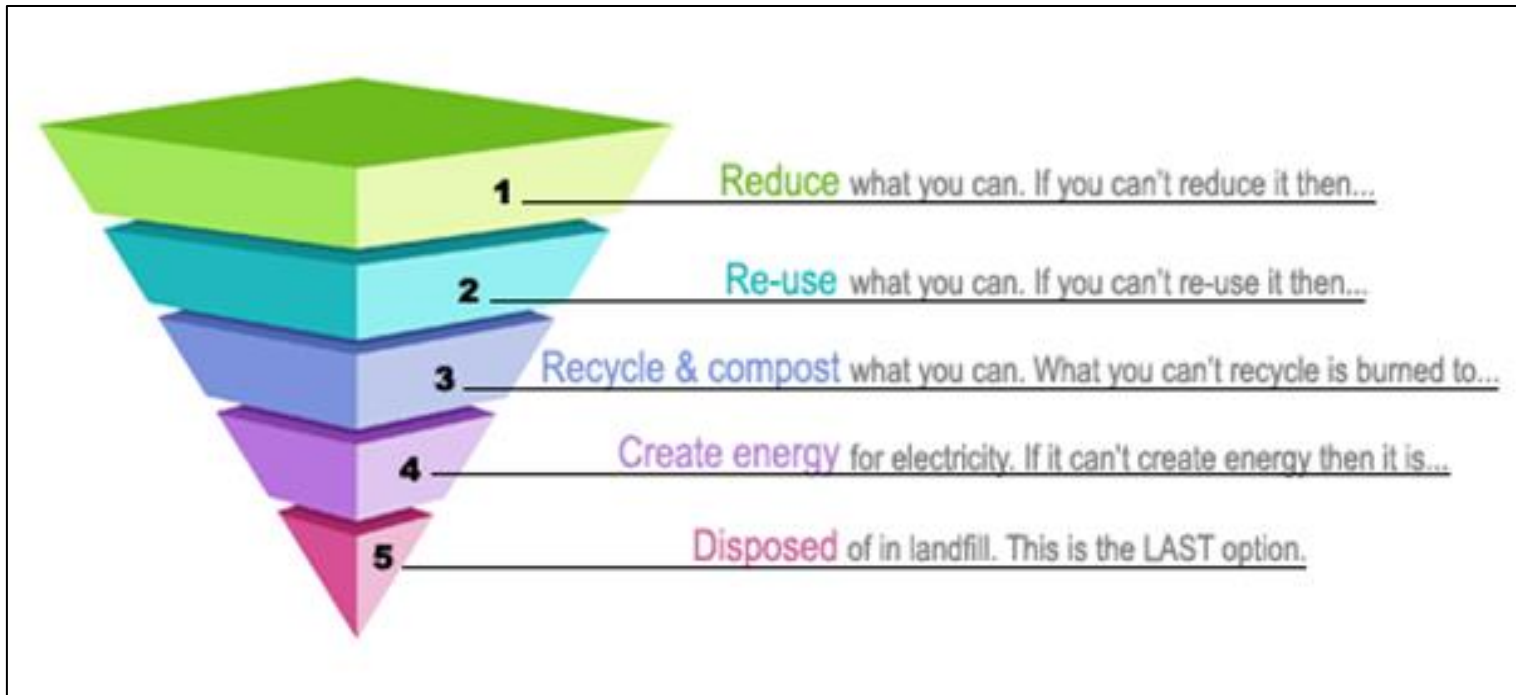
Wastewater treatment process design has been centred around production of compliant effluent for some time. With the sludge production stream often represented by an arrow and famous words “*to disposal*”.

## Issues with this approach:

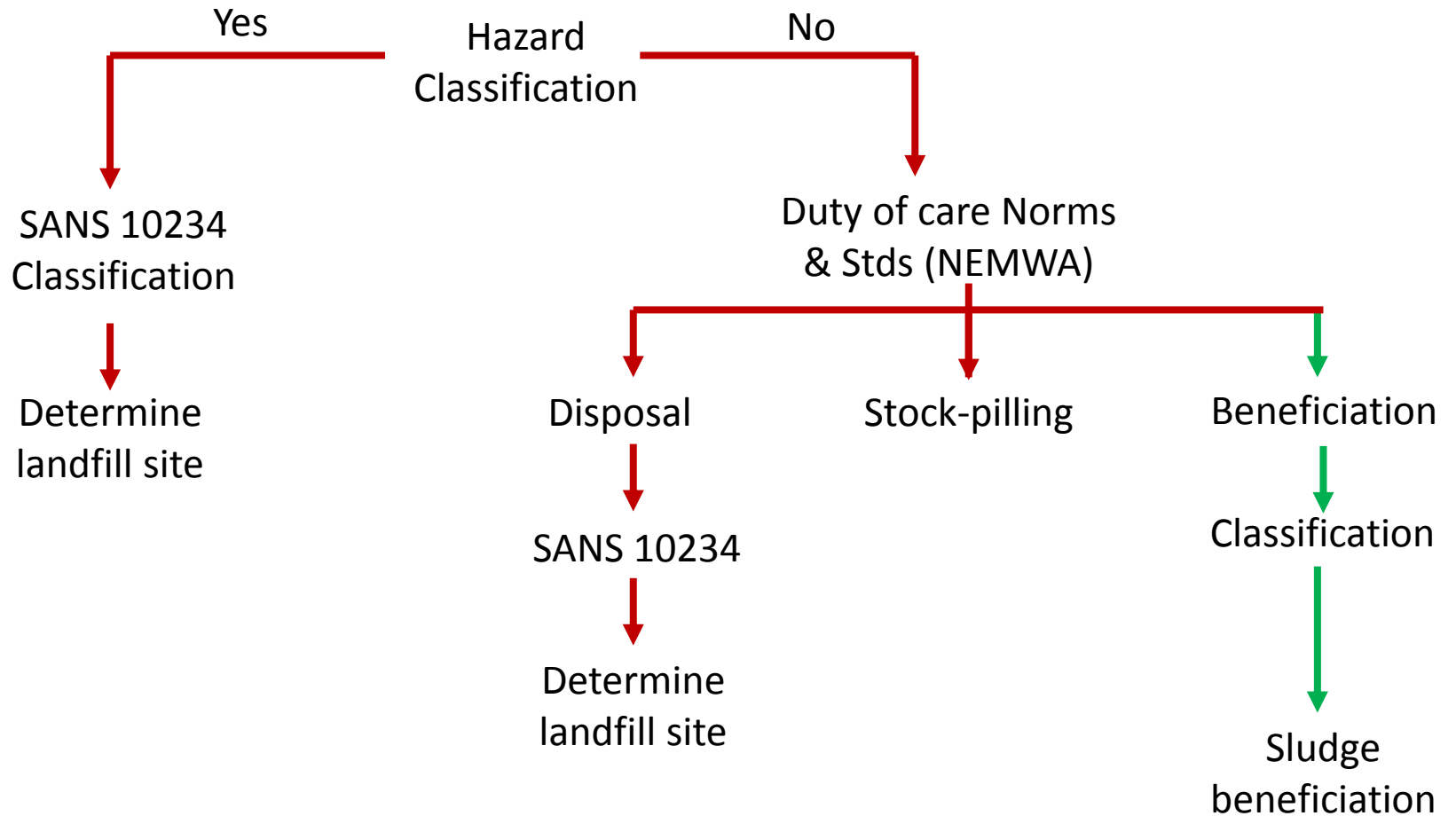
1. It considers the environment in parts i.e. effluent induced pollution is prioritised.
2. Leaves plant managers with an unclear directive to negotiate disposal agreements etc.
3. Developing a sludge management system is not understood.



# Sustainable Waste Management Approach



# SA Approach





- Waste:
  - Heavy metals
  - Microbiological pollutants
  - Stability
  - Nuisance
- Resource:
  - Organics
    - Methane potential - Energy
  - Nutrients
    - Fertiliser value (often low value)
- Two CHP plants, two in planning
- One '*passive*' compost plant from sewage sludge
- The science makes sense



# Wastewater sludge

- Why are we not we doing it?
  - Too much knowledge?
  - Proof of concept?
  - Finances?
  - Etc....



## Darvill:

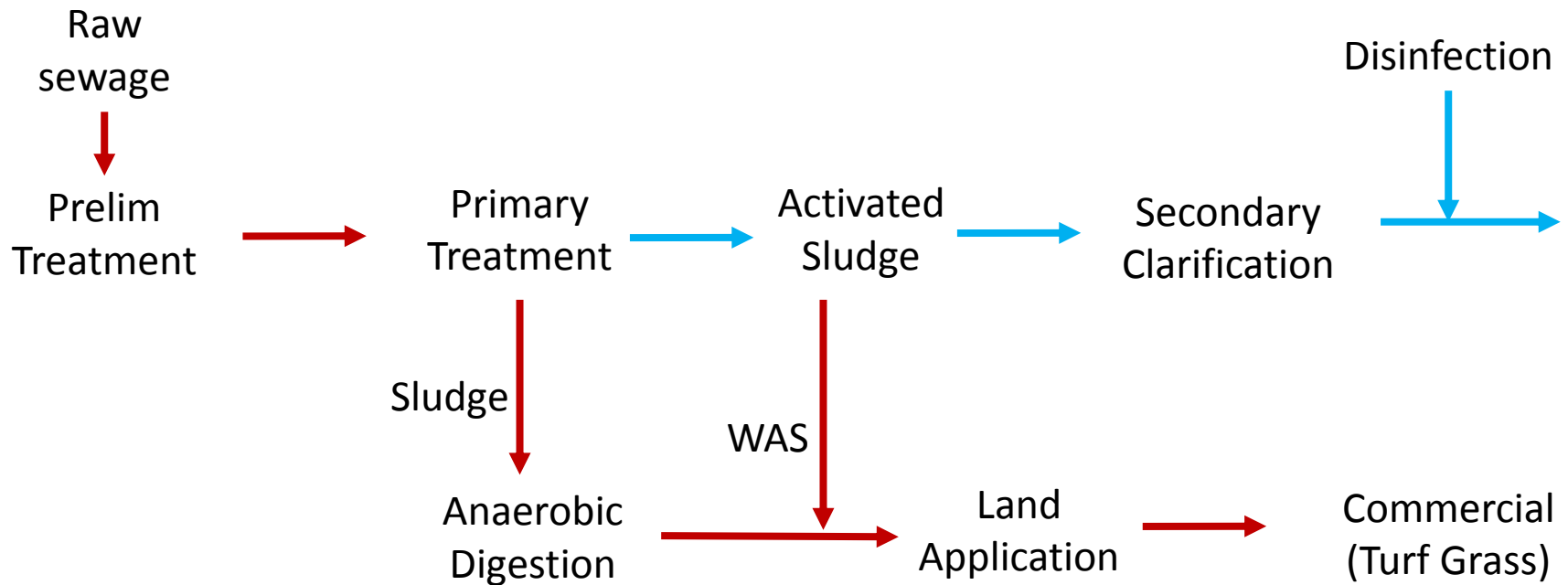
- 75 MI/d wastewater plant in Pietermaritzburg – KZN
- Currently being upgraded to 120 MI/d





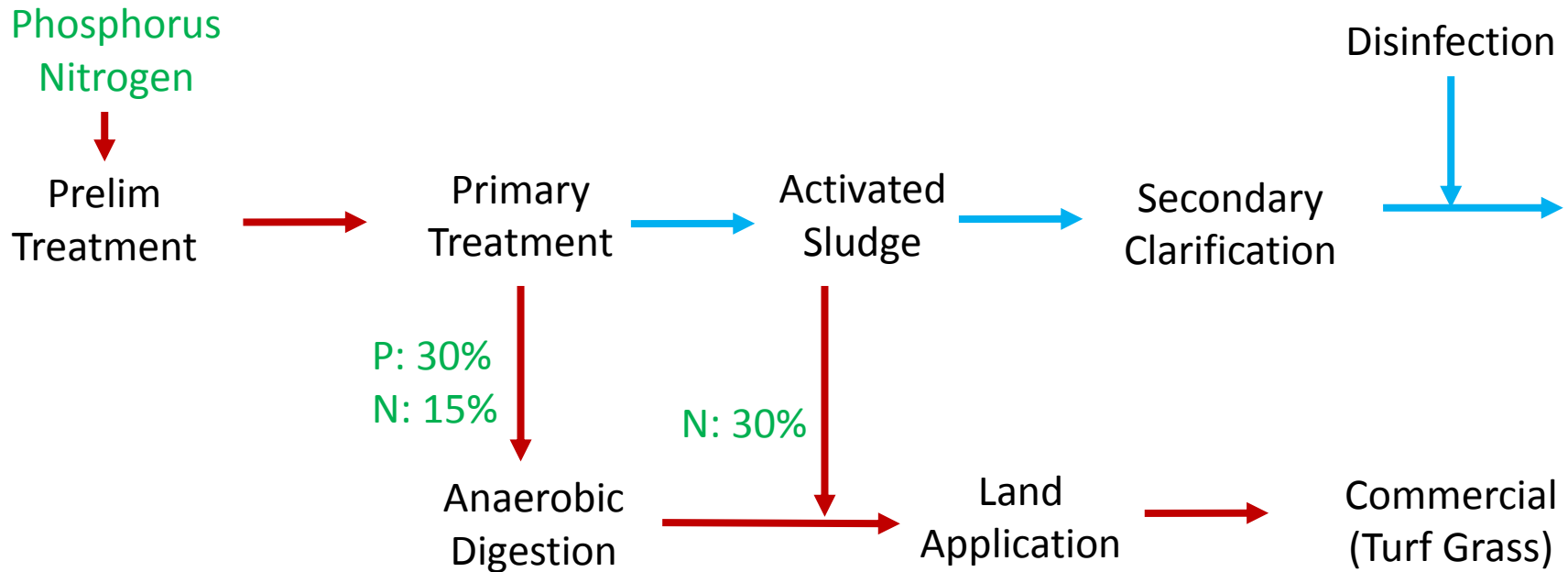
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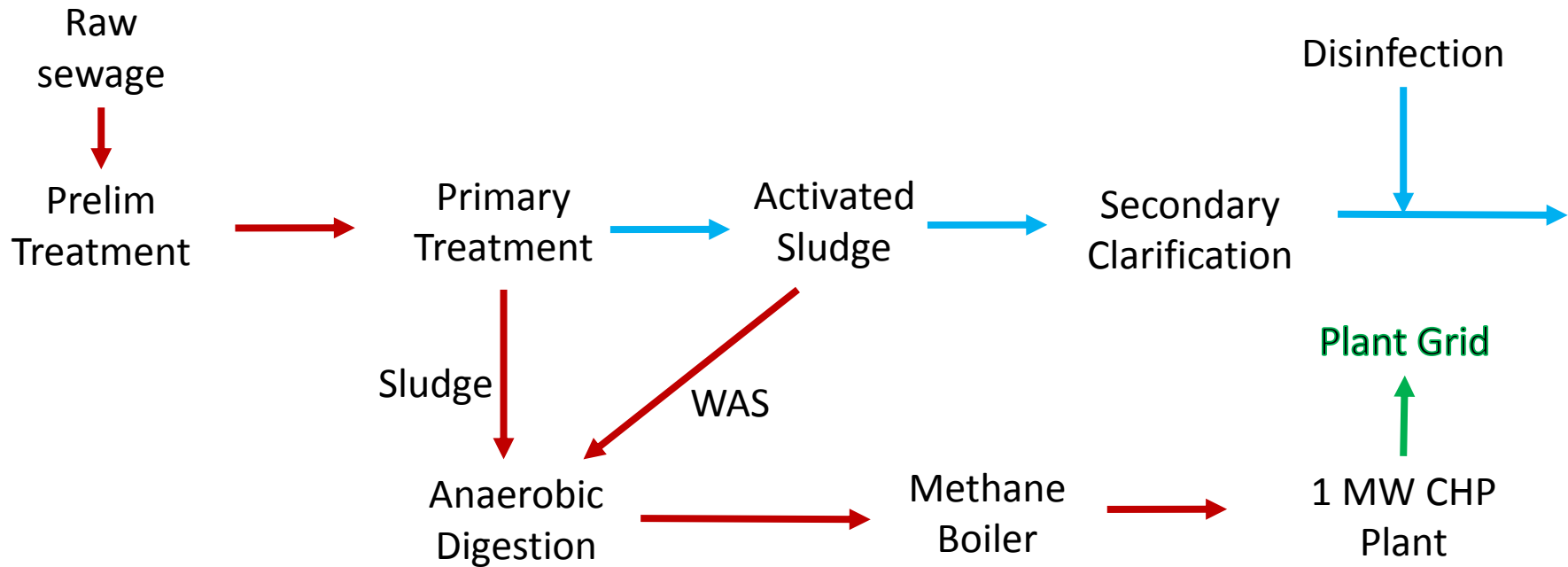
## Darvill:

- Upgrade of the sludge treatment system
- From 9 MI to 18 MI digester capacity



Darvill:

- Frequent power failures
- Electricity bill



Not just an arrow

Waste - Design - Resource

Value engineering - Energy

Involve other disciplines

SA not there yet

Innovation, finish first



THANK YOU

