Politeknik Nilai

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COOKING GAS FROM FOOD WASTE

ISSUES

Lets start with the main problem –

"FOOD WASTE"

SOURCE : THE STAR, 2011

Unwanted Fruits And Vegetables

Food Leftovers

Gravy And Oil

Drinks

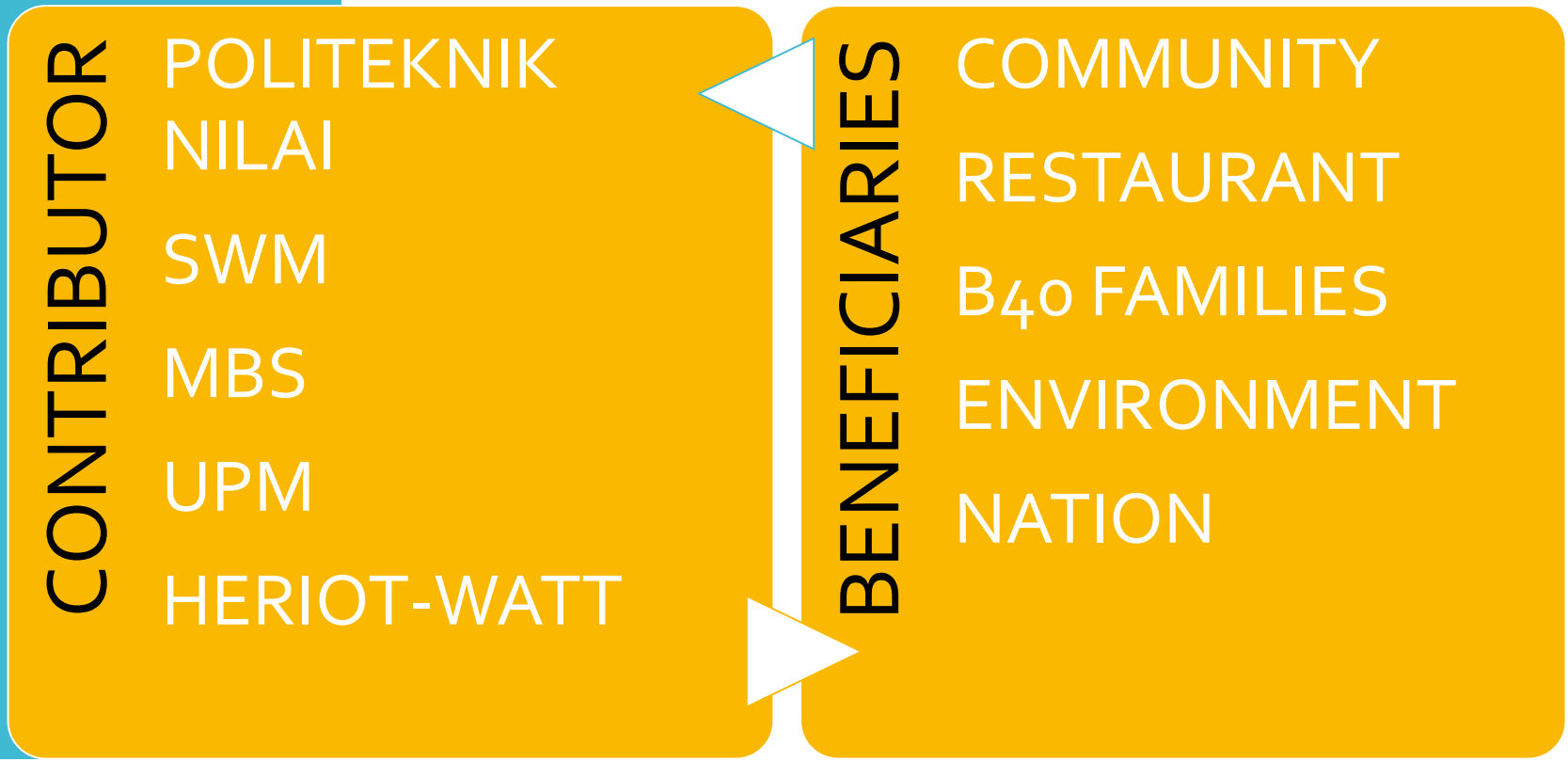
EFFECTS

1. SMELL
2. ATTRACTING PEST AND CAUSE DISEASES
3. LAND POLLUTION

OBJECTIVES

1. To educate community to segregate their food waste
2. To produce low cost cooking gas from segregated food waste to community

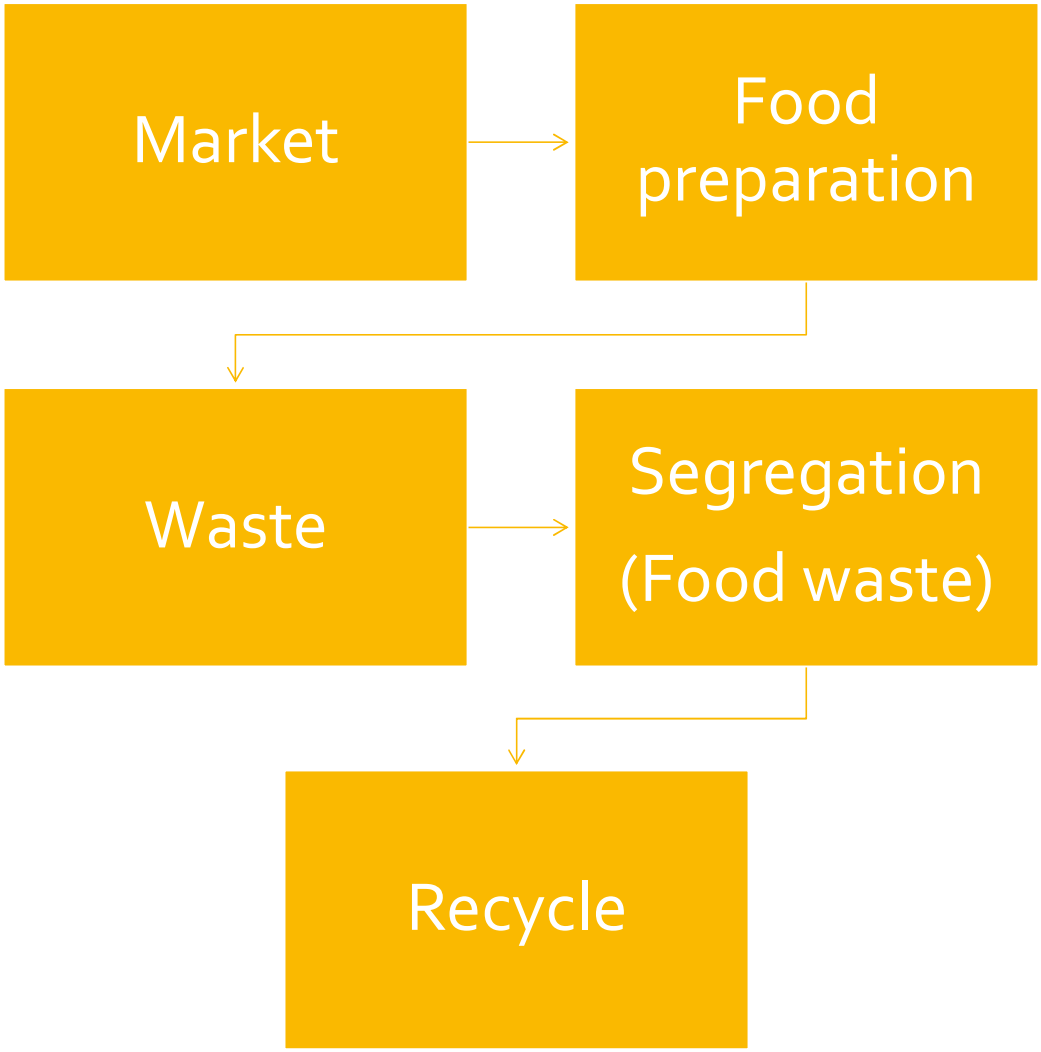
KEY PARTNERS AND TARGETED GROUP



BIOGAS

Product : Biogas
ANAEROBIC DIGESTER
•Content :
•60% of methane gas
•30% of Carbon dioxide
•10 % of trace elements
Suprisingly , purified gas can produce elecricity

FOOD WASTE COLLECTION



PRODUCT OPERATION 1 – BIOGAS PRODUCTION

Food waste collection → Processing Of food waste → Production Of Biogas → Compression/ Storing → Distribution

OPERATION 2 – SERVICES

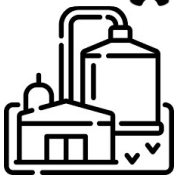
Identification of residential area

Discussion with representatives (municipal and residential)

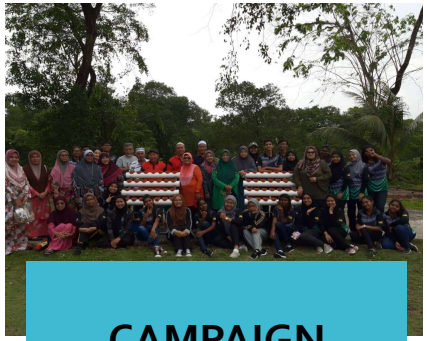
Setup of AD

Collection

Storing and distributing



PROMOTION



CAMPAIGN

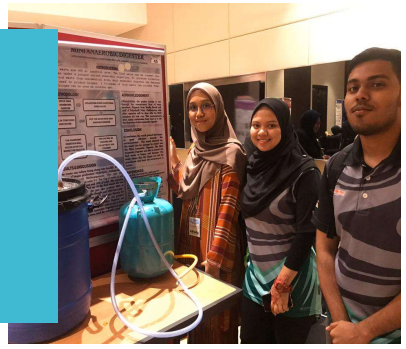
- Go Green Initiatives
- Booth And Showcase
- Branding

ACTIVE COLLABORATION

- SWM Corp
- UPM
- TNB
- Municipal
- Residents

EXHIBITION

- Bring Forward Research
- Partnership Through Research Projects

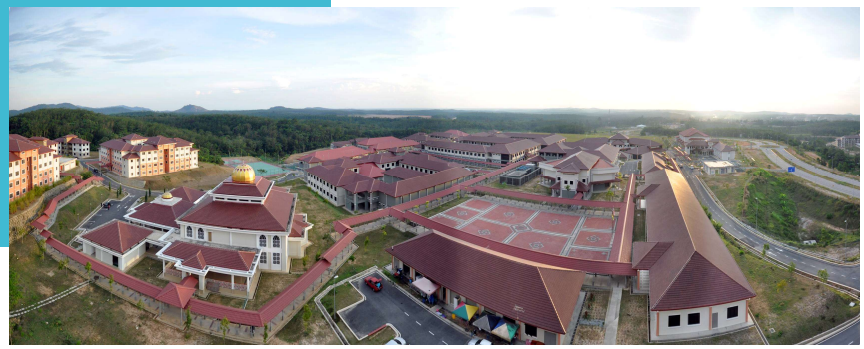


IDENTIFICATION OF AREA

- **Places**
  - **High-density**

    (Residential area , school)
  - **Food processing activities**

    (food court , night market , restaurant)



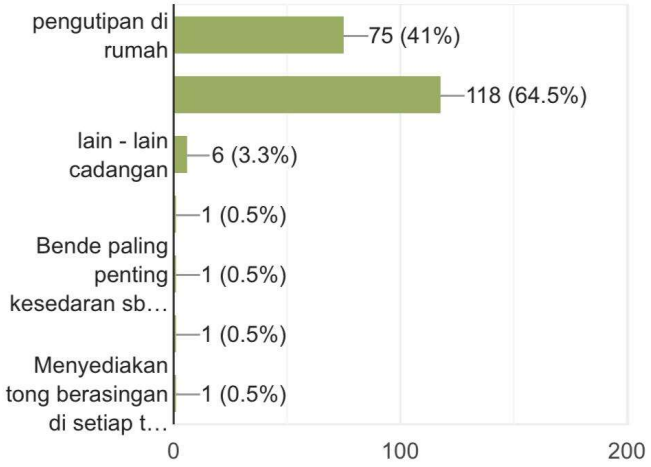
YesilevGas

RESIDENTS SURVEY

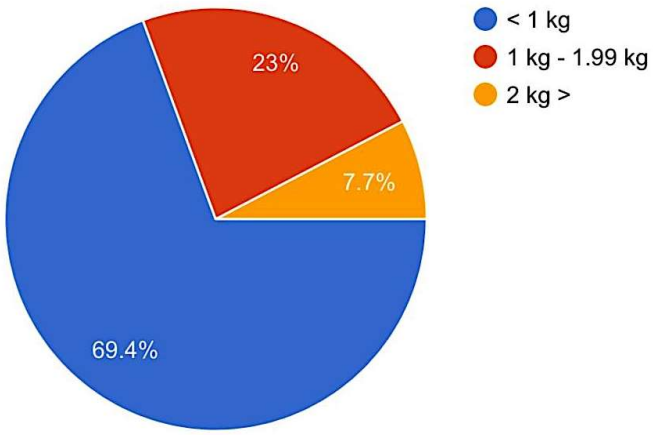
1. To identify the favored method for waste collection

2. To figurate the amount of food waste produced daily at Nilai area

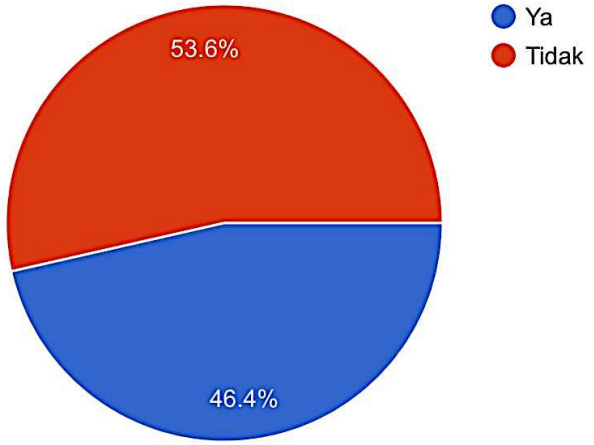
1. Method of collection



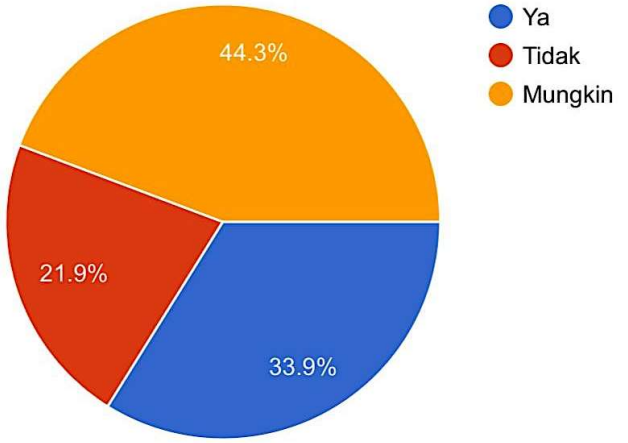
2. Amount of waste produced daily



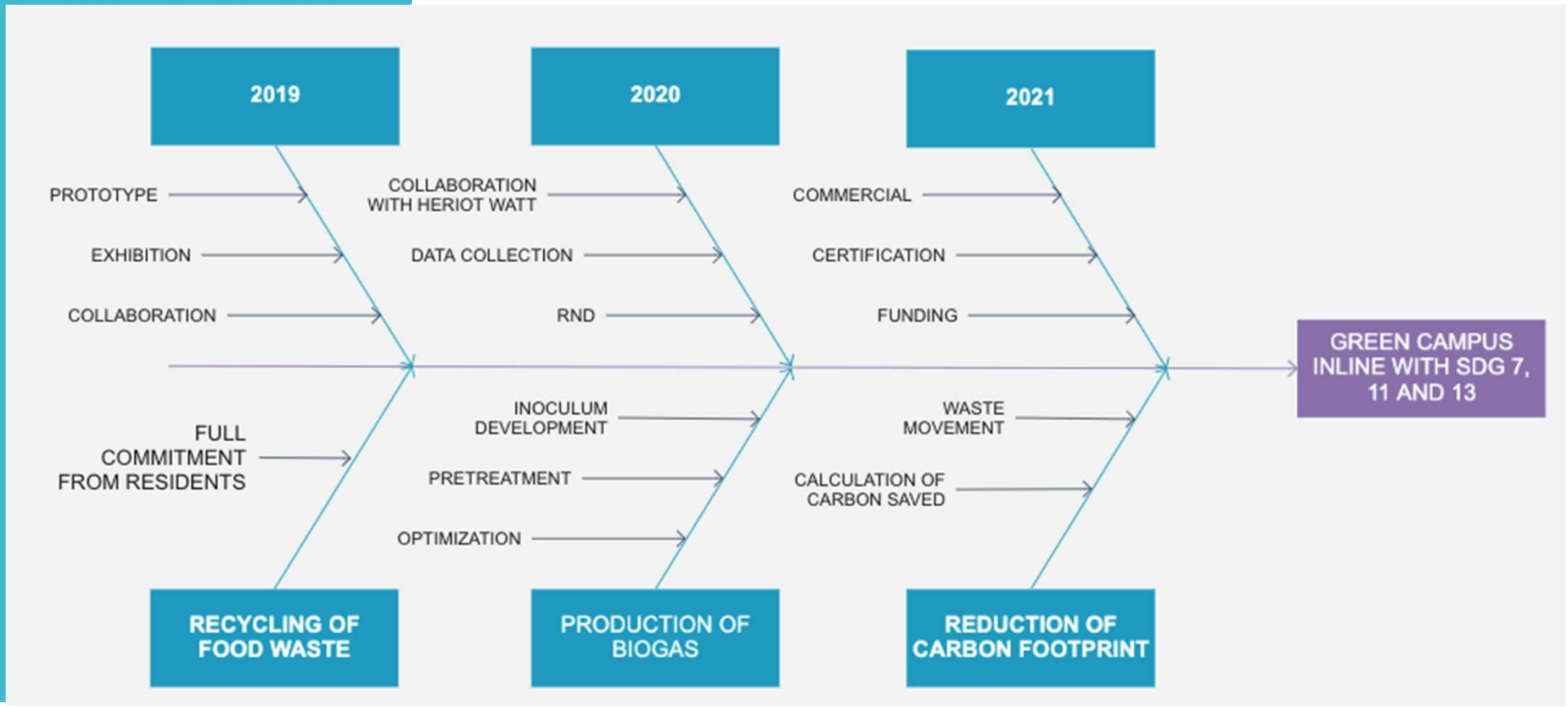
3. Information on biogas



4. Using biogas as option for cooking gas



FRAMEWORK

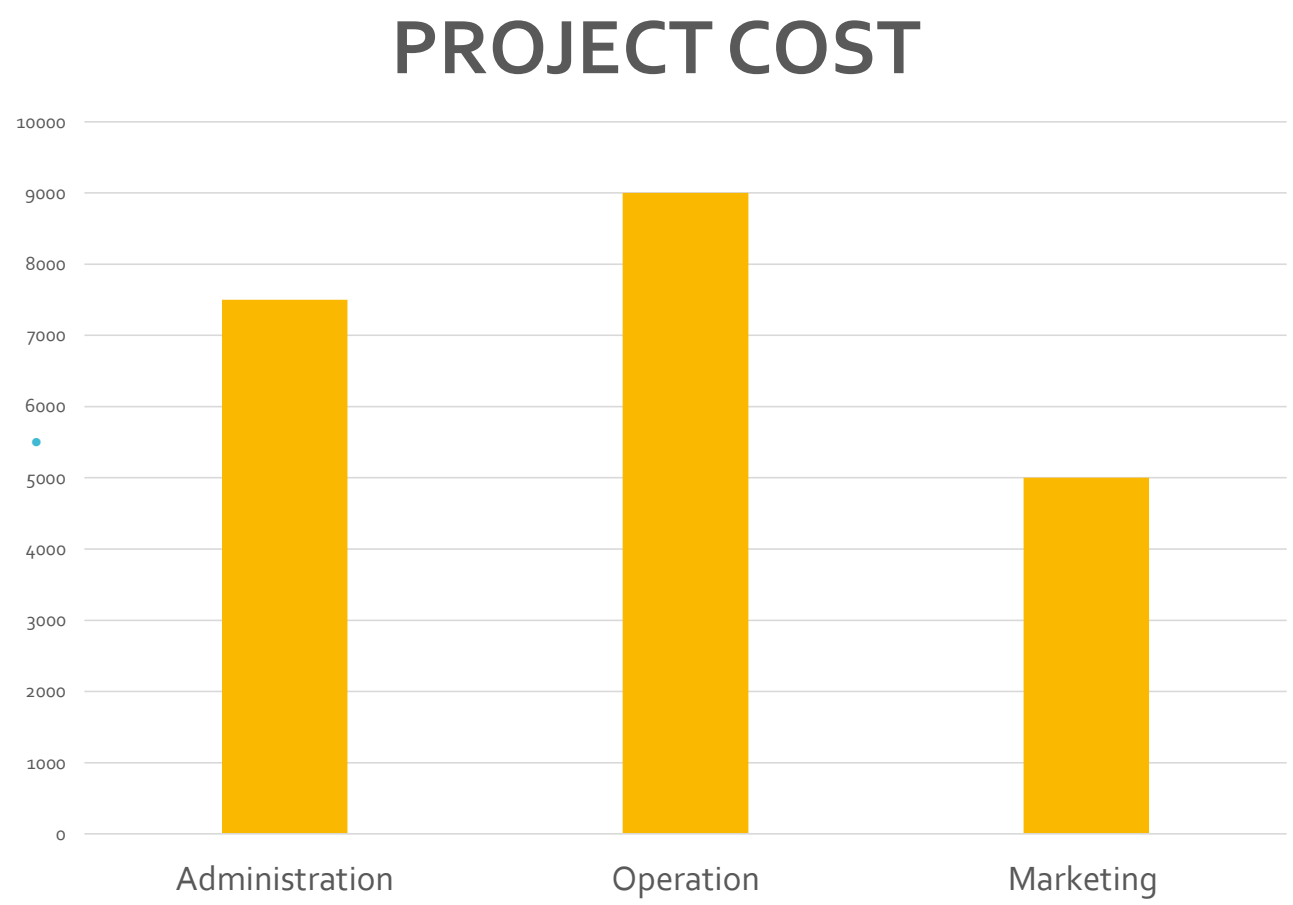

2019
2020
2021
PROTOTYPE
EXHIBITION
COLLABORATION
FULL COMMITMENT FROM RESIDENTS
COLLABORATION WITH HERIOT WATT
DATA COLLECTION
RND
INOCULUM DEVELOPMENT
PRETREATMENT
OPTIMIZATION
COMMERCIAL
CERTIFICATION
FUNDING
WASTE MOVEMENT
CALCULATION OF CARBON SAVED
GREEN CAMPUS INLINE WITH SDG 7, 11 AND 13
RECYCLING OF FOOD WASTE
PRODUCTION OF BIOGAS
REDUCTION OF CARBON FOOTPRINT

IMPACTS 5P

KEMASYARAKATAN
Masyarakat Dan Pengguna
Sokongan komuniti
ALAM SEKITAR
Tenaga
Tenaga boleh diperbaharui
Konsumsi
Kitar semula dan penggunaan semula
Kontaminasi dan pencemaran
Pelupusan
Penjanaan sisa
PROSES
Keberkesanan
KEMAKMURAN
Stimulasi ekonomi
Impak ekonomi tempatan
Faedah tidak lansung
PRODUK
Servis produk

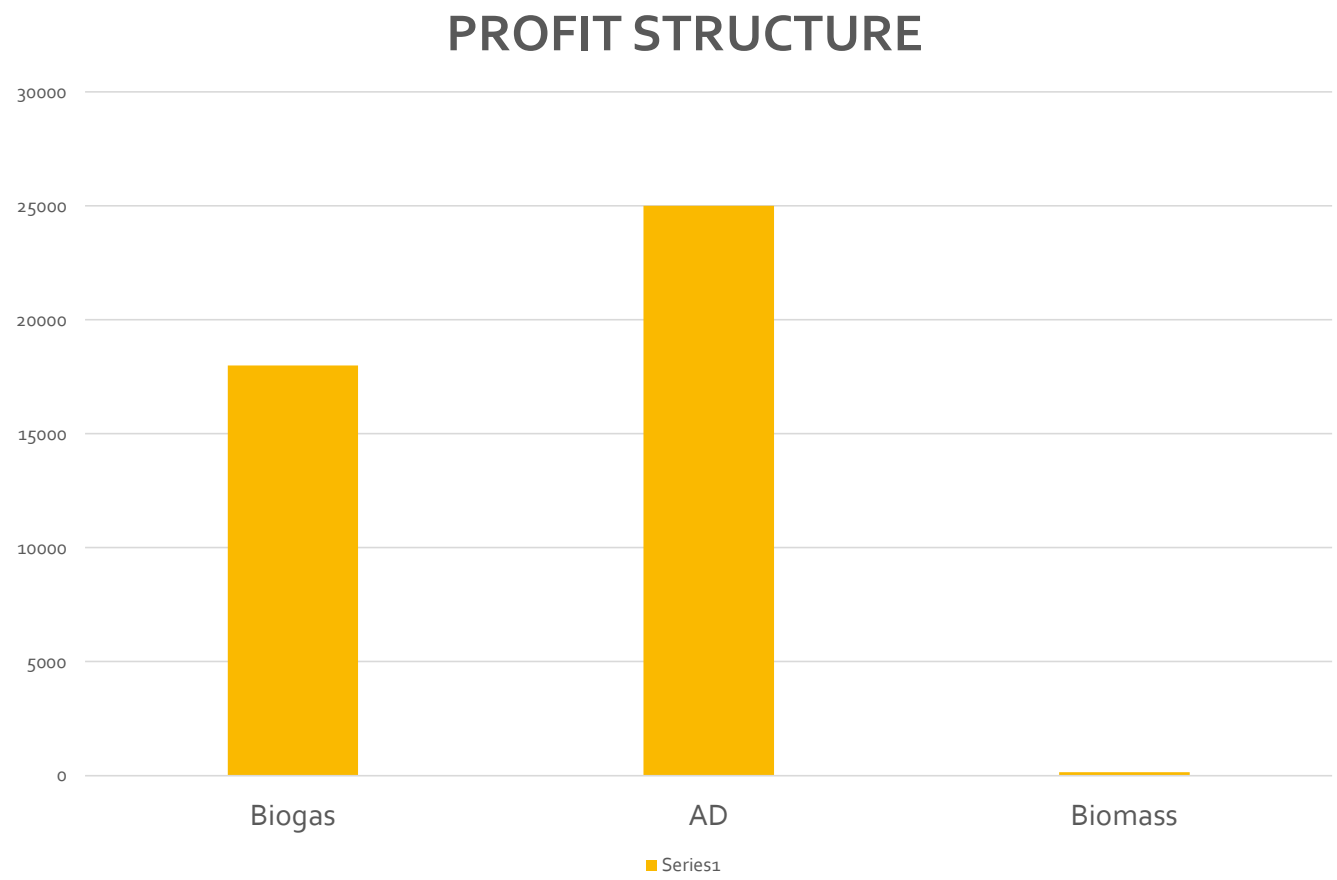
FINANCIAL COST

Three main cost; administration, operation and marketing



No.	Item	Quantities	Cost (RM)	Total (RM)
Administration				
1	Staffs	5	1500	7500
Operation (Fixed Cost)				
2	Anaerobic Digester unit	1	5000.00	5000.00
3	Logistic	1	1000.00	1000.00
4	Facility storage	1	3000.00	3000.00
Marketing (Estimated Cost)				
5	Campaign	1	1000.00	1000.00
6	Labelling	1	1000.00	1000.00
7	Sosial media	1	1000.00	1000.00
8	Exhibition	1	2000.00	2000.00
Total Cost				RM 21,500.00

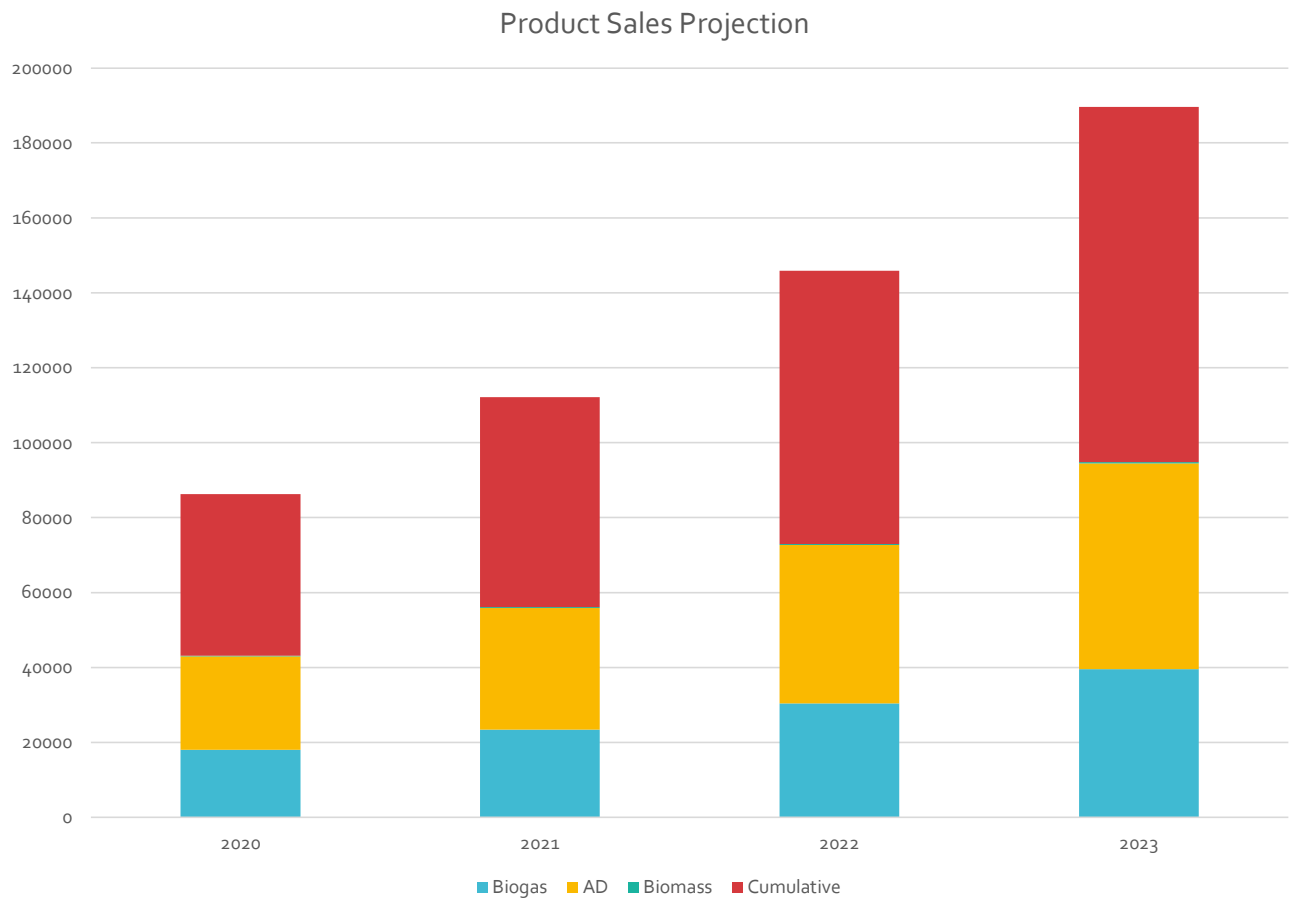
PROFIT STRUCTURE



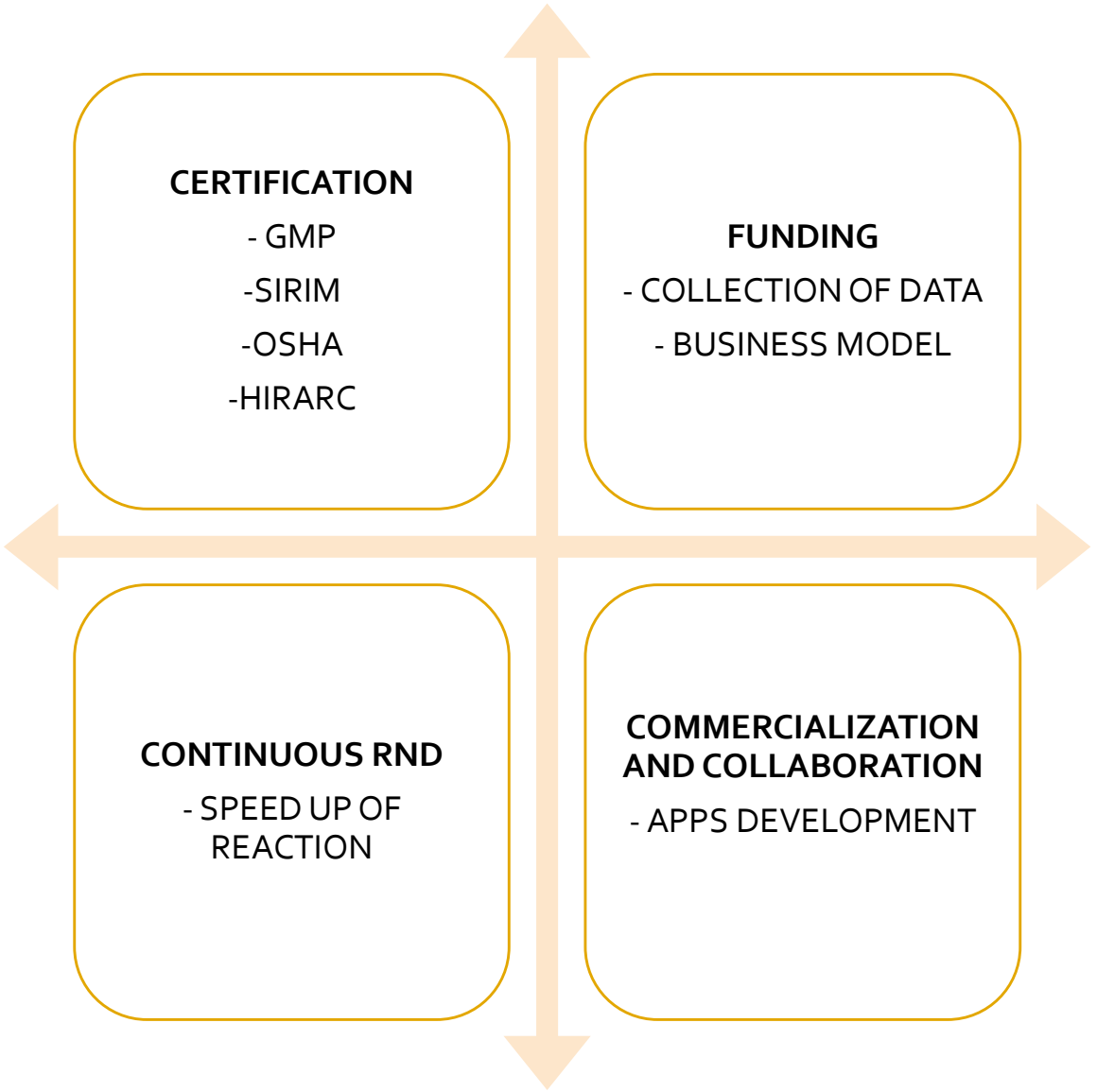
PRODUCT SALES PROJECTION

2020 – 2023

0.3 increment annually



MOVING FORWARD



Progress

- Youtube video
- https://www.youtube.com/watch?v=byuesggbX8M&t=48s&ab_channel=isaizat