

My solution / TSNGF (Three-stage nano green biofilter)

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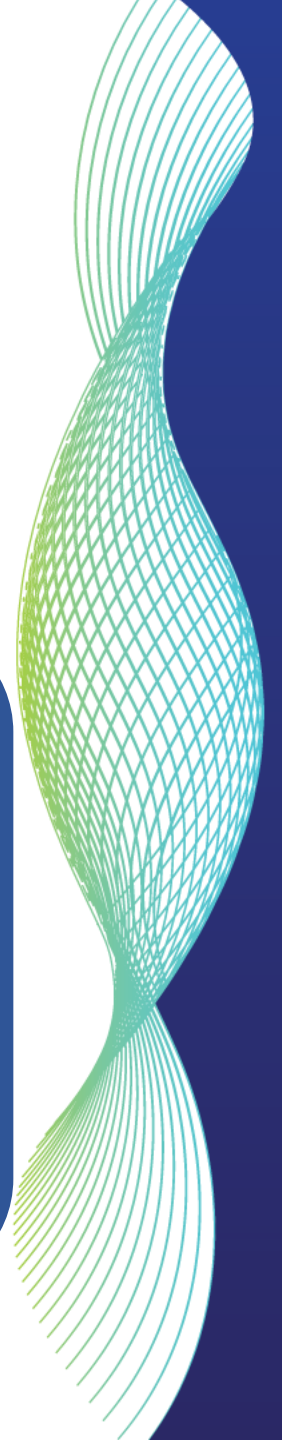


Problem Statement

The project aims to solve two problems:

The first problem: The burning of plant waste in the environment due to its abundance (such as water hyacinth and sugarcane waste).

The second problem: Villages lacking suitable water for irrigation and lacking drainage networks.





The project aims to solve two problems:

● Statistics on the problem of burning plant waste

Item	Quantity (Annually)	Government Cost for Burning (Million EGP)	Environmental Cost (Million EGP)
Rice straw	4.0 million tons	60	200
Sugarcane bagasse	5.0 million tons	75	250

● Statistics on the problem of villages that lack irrigation water and drainage networks

Type	Percentage	Estimated Number
Individual Beneficiaries	45%	2,58
Institutional Beneficiaries	55%	1,175

● Result

- Global warming resulting from the burning of waste.
- Decreased agricultural productivity due to irrigation with wastewater.
- The formation and presence of drains in villages due to the lack of drainage networks.

Solution Overview

A smart biological filter converts wastewater, into irrigation water. This multi-stage system consists of three main steps:-
stage 1: Using microorganisms to decompose pollutants
stage 2: Using plant waste to absorb harmful substances
stage 3: Using nanocomposites to enhance filtration efficiency

- ❖ The three stages of the IoT system are linked to a remote-control system



MVP

(The green component)

Chlorella algae



Removes organic and mineral pollutants

Eichhornia

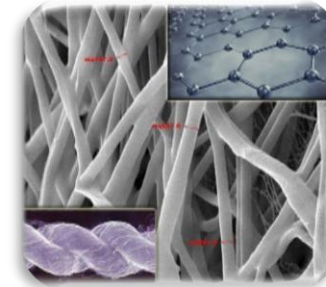


Removal of heavy metal pollutants

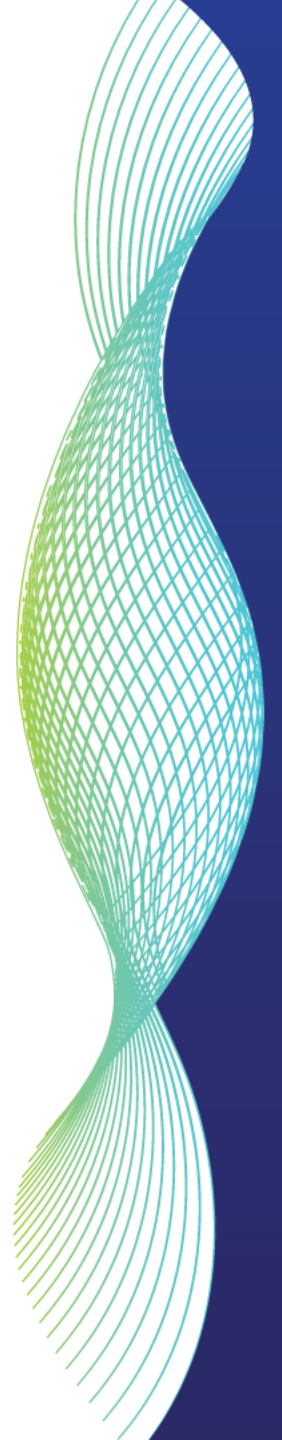
Bagasse



Nanofiber

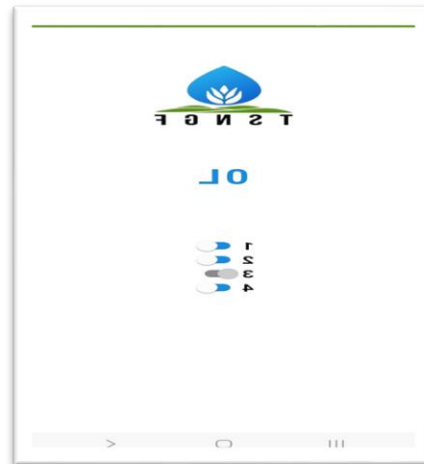
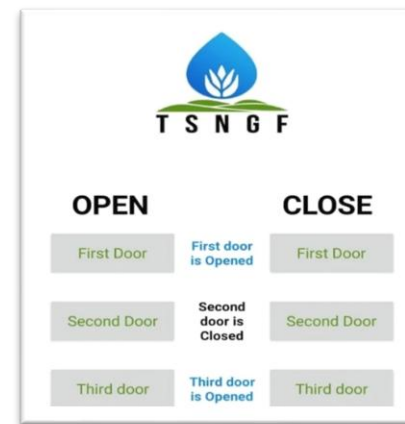
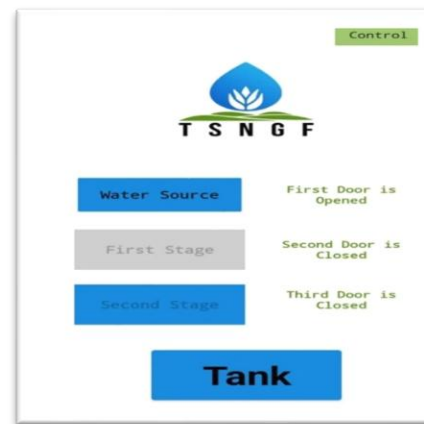


Removing dyes and impurities

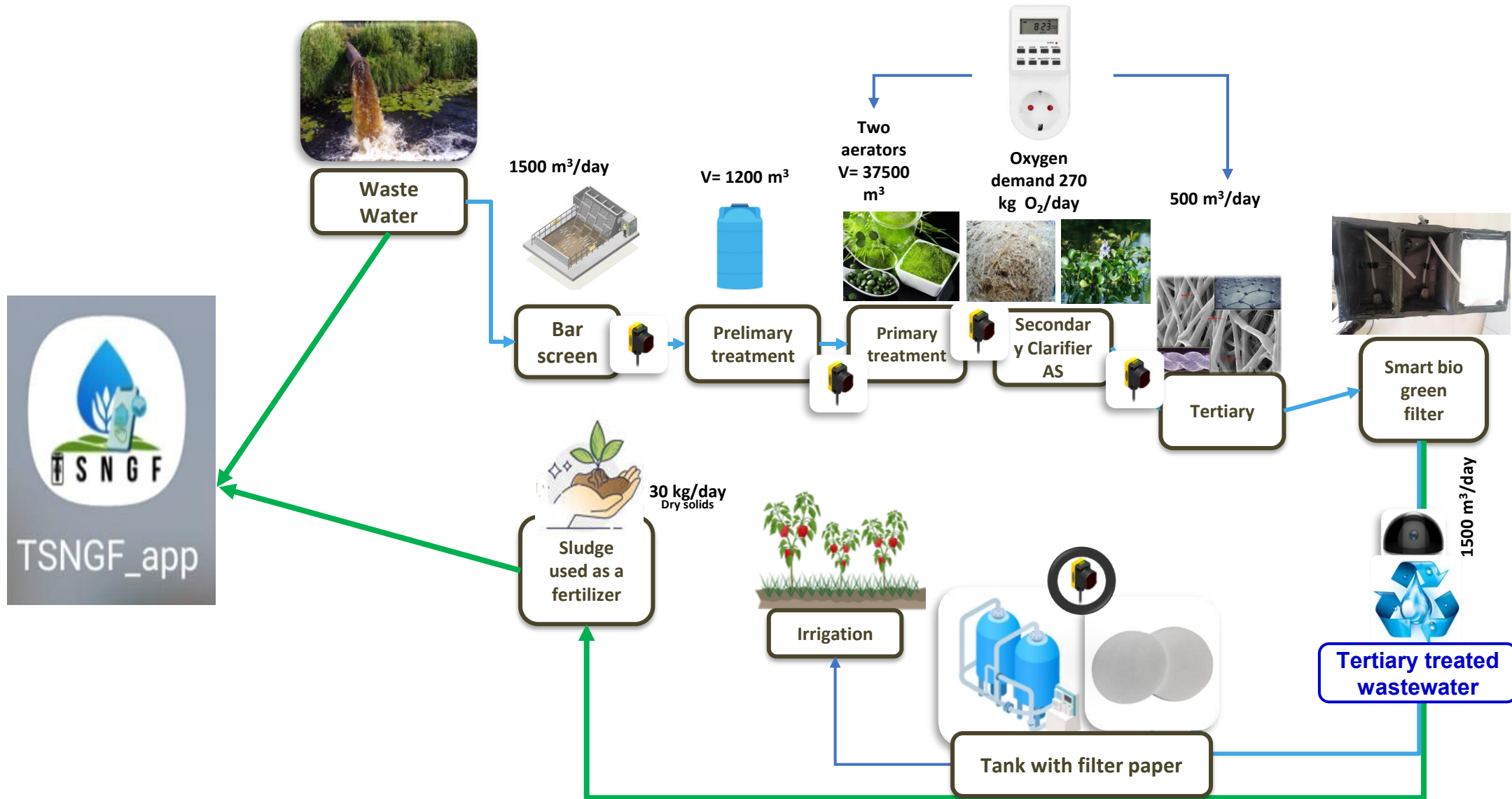


MVP

(The Smart Component)



Technical Solution



AI: Your Water Purifier's Eye for Quality Detection

Leveraging Computer Vision and Deep Learning for instantaneous, non-invasive water quality assessment at the point of use.

Visual Risk Identified

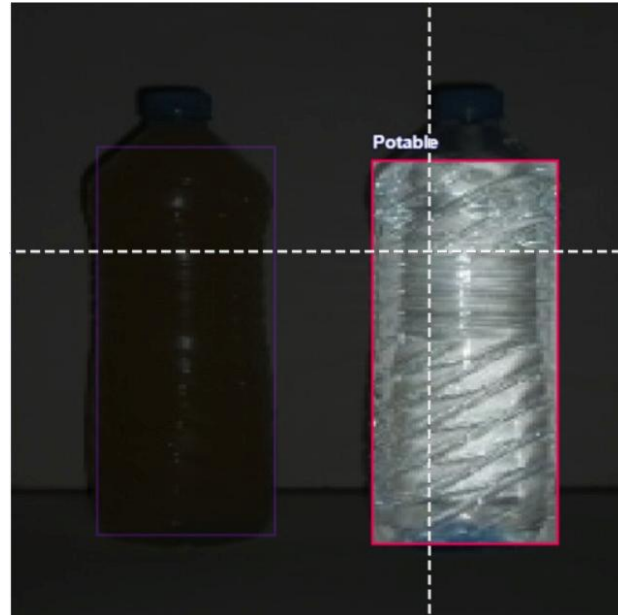
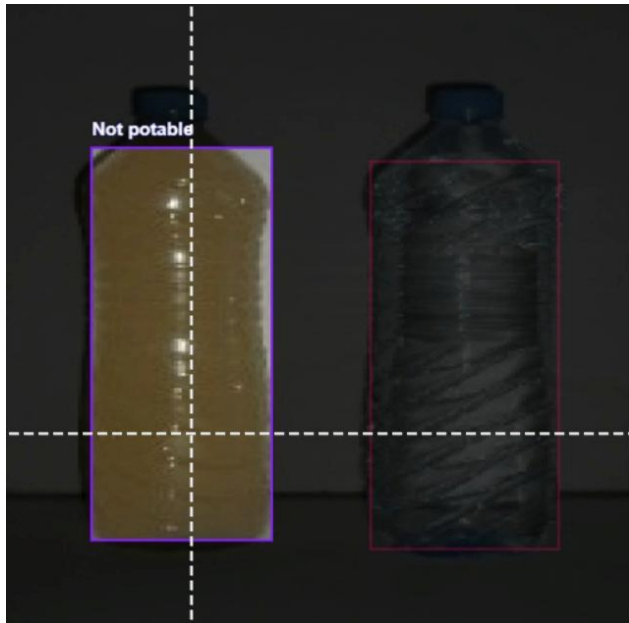
AI uses Computer Vision to analyze the water sample image.

Flags Non-Potable Samples

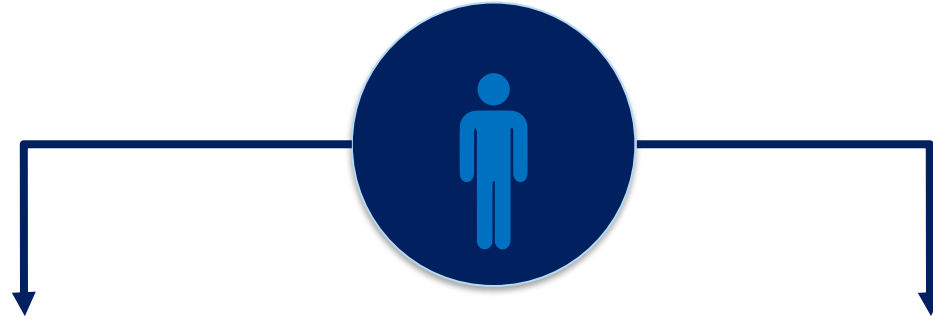
Clearly identifies contamination risk, such as extreme turbidity or discoloration, validating the need for filtration.

Classification (Potable/Not):

High-accuracy decision



Target Audience

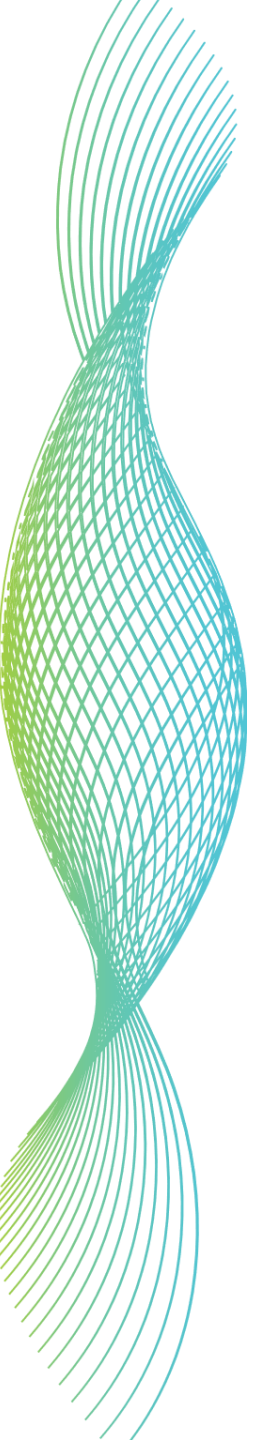


- Target 200,000 acres in the following villages:
- such as (Bani Affan Village - Baroud Village - Nana - Fazara - Kahwet Hali - Ali Estate - Kilani - Arfa Estate - Al-Mashariqa - Ahnesia Complex)

- Agricultural landowners
- Irrigation companies and units
- Agricultural associations
- Landscape, factories and private companies

Competition Analysis

Product name		Efficiency	Quality	price	sustainability
RO treatment units		✓	✓	30000	✗
Government sewage stations		✓	✓	120000	✗
Pure Aqua		✗	✗	15000	✗
Tank Power		✓	✗	10000	✗
Carbon filter		✗	✗	7000	✗
Sand Filter		✗	✗	17000	✗
TSNGF		✓	✓	7000	✓



Financials

Smart unit cost

Total Cost per unit = 15.240

Total Selling price per unit = 18000

Total Net profit per unit = 2760



Manual unit cost

Total Cost per unit = 4000

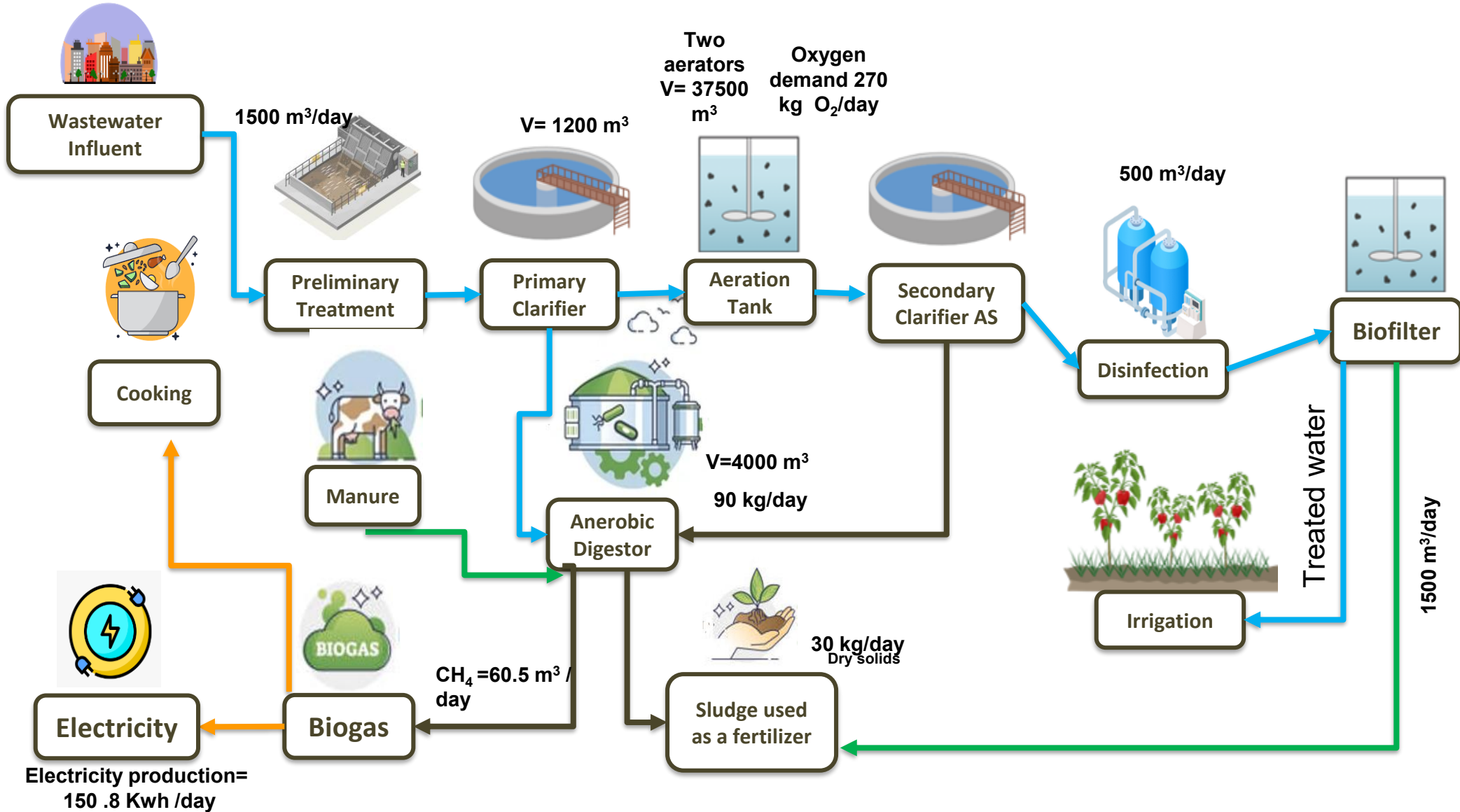
Total Selling price per unit = 7000

Total Net profit per unit = 3000



**To irrigate 150 acres,
The filter removes 300 grams of pollutants per hour.
The filter purifies 600 liters of water per hour.**

Future plan



Future plan



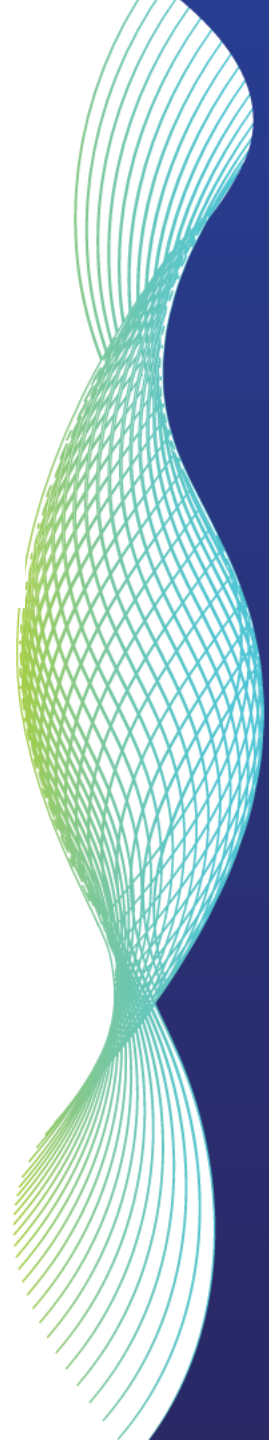
Women empowerment

**Civil society
Association**

Education

**Economic
development**

Agriculture



THANK YOU

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