Clean Cooking and waste to energy

Lesson 4. Installations, operation and maintenance for Biogas systems

Francisco Cuadros, CEO, Metanogenia

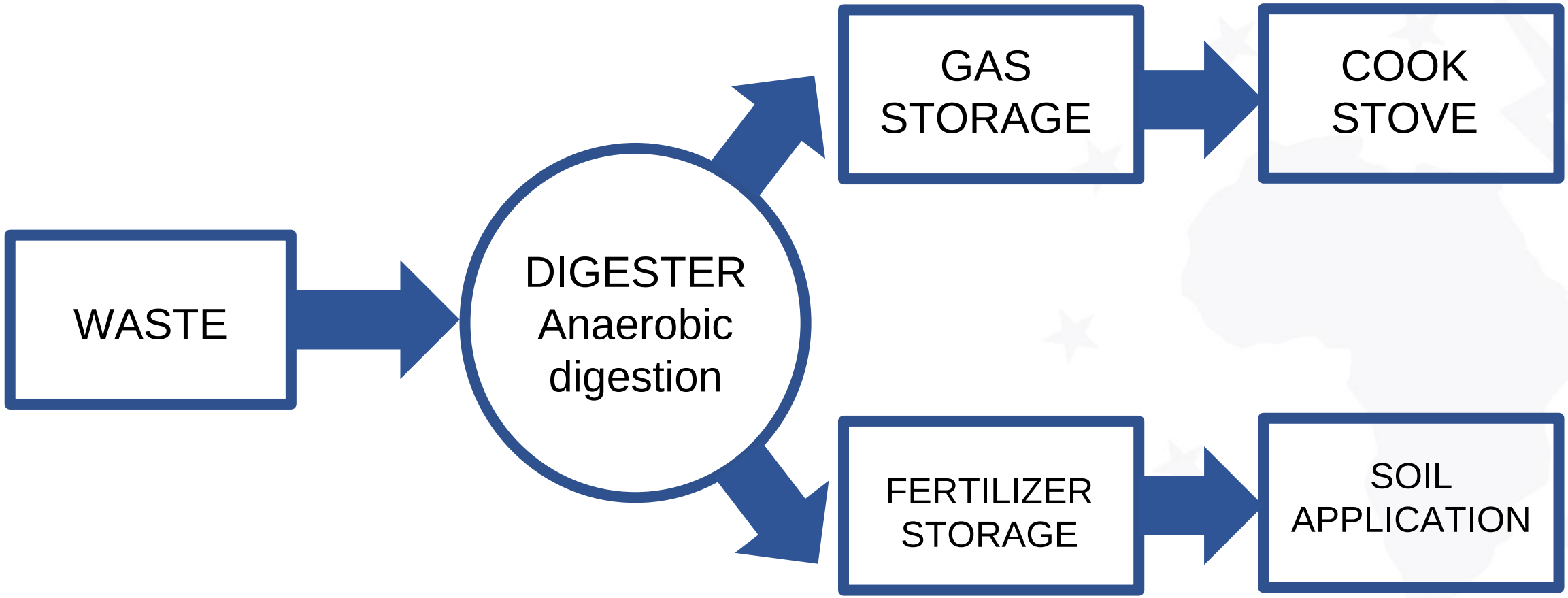
This project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No. 101037141. This material reflect only the views of the Consortium, and the EC cannot be held responsible for any use that may be made of the information in it.

In this video you will learn:

- Process diagram
  - Devices
    - Commissioning
      - Operation
        - Maintenance

1. PROCESS

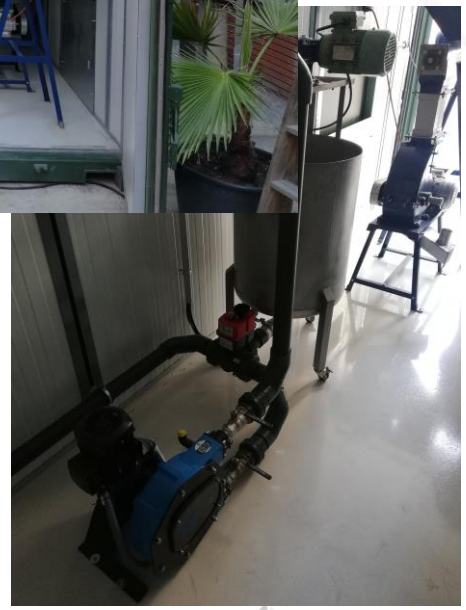
Process Diagram



2. DEVICE

2. Devices examples

2. Devices examples



3. COMMISSIONING

3. Commissioning

Leak removing:

- Fill the device with water
- Identify leaks
- Act on leaks

Pressure:

- Pressurize the system and close all outlet valves
- Check for loss of pressure
- Act on points where gas is being lost

3. Commissioning

Inoculum input:

- Homogenization of sludge with bacterial load
- Introduction to the digester
- Agitation or recirculation of the sludge inside
- Increase in temperature in the digester

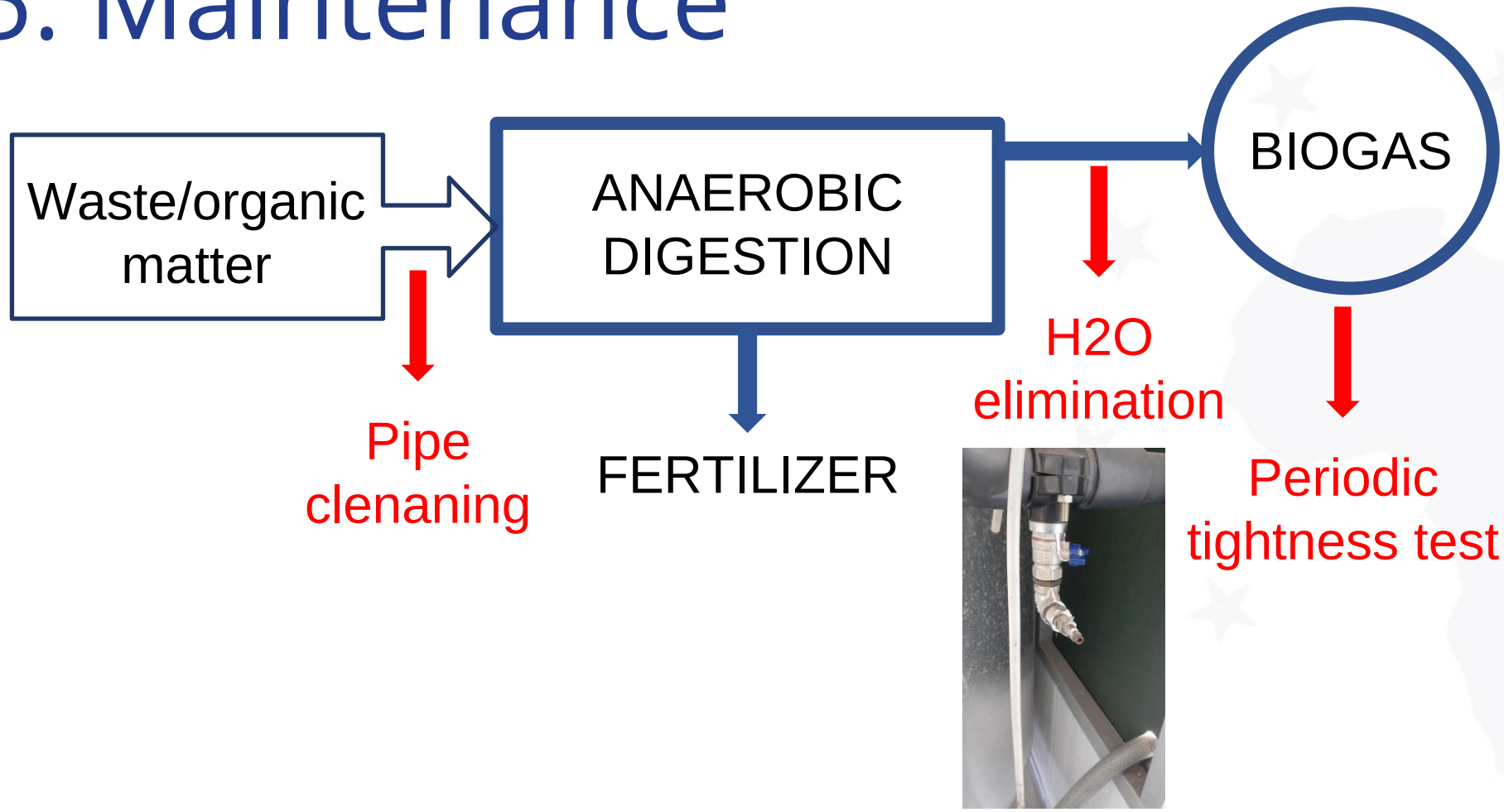
4. OPERATION

4. Operation, control variables

ORGANIC LOADING RATE – DAILY FLOW	pH	Biogas produced
Amount of daily organic matter that must enter the digester to maintain bacterial health and the stability of the anaerobic process. Above this daily flow there is a danger of inhibition due to organic overload. This flow rate depends on the type of waste that we are going to introduce into the reactor.	The optimal value is 7.5. Below this value, there is a danger of reaching inhibition. It is the easiest measurable value to obtain enough information about the stability of the process. The pH is measured in the digestate as soon as it leaves the digester.	The amount of gas obtained can be measured daily with analog gas meters. Both flowmeters and gasometric devices. The decrease in gas produced is an indicator that something in the aerobic reaction is not working correctly.

5. MAINTENANCE

5. Maintenance



THANK YOU

sesa-euafrica.eu/
toolbox.sesa-euafrica.eu/

This project has received funding from the European Union's Horizon 2020 research and innovation programme under the grant agreement No. 101037141. This material reflect only the views of the Consortium, and the EC cannot be held responsible for any use that may be made of the information in it.