

# About Meiwa Co., Ltd.

## A technology-oriented company developing environmental plants

- **Year of Incorporation:** 1965 , - **Number of staff:** About 50
- **Location:** Kanazawa City, Ishikawa Prefecture, Japan
- **Main business area:** Environment / Agriculture / Renewable energy
- **Main products:** Biomass carbonization plant / Effluent treatment facility / Methane fermentation system / Dust collector, etc.
- **Project partners:** University of Tokyo, JICA, Ministry of the Environment, etc.
- **Participated conference:** TICAD VI Follow-up conference (Mozambique), TICAD VI Japan Fair (Kenya), UNIDO Low Carbon Technology Workshop (Kenya)



# Meiwa's Technology: Biomass Carbonization -General

Unutilized Biomass



Carbonization plant

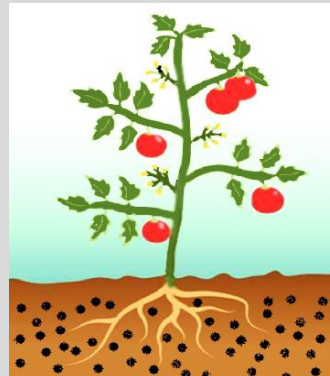
Biochar



Renewable Fuel



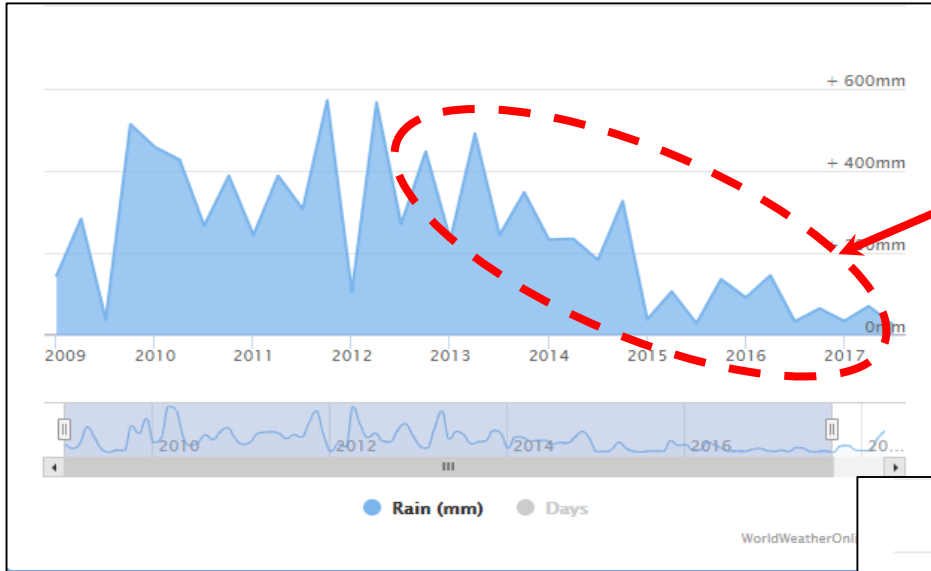
Drought-Resilient  
Agriculture



**Drought = losing everything**



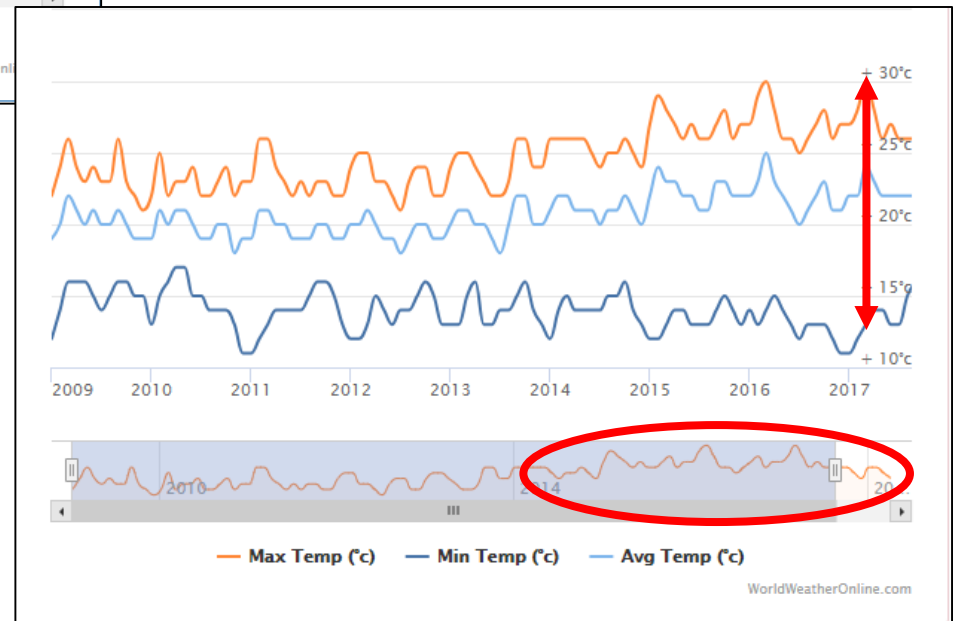
# Challenge of Africa: Climate Change



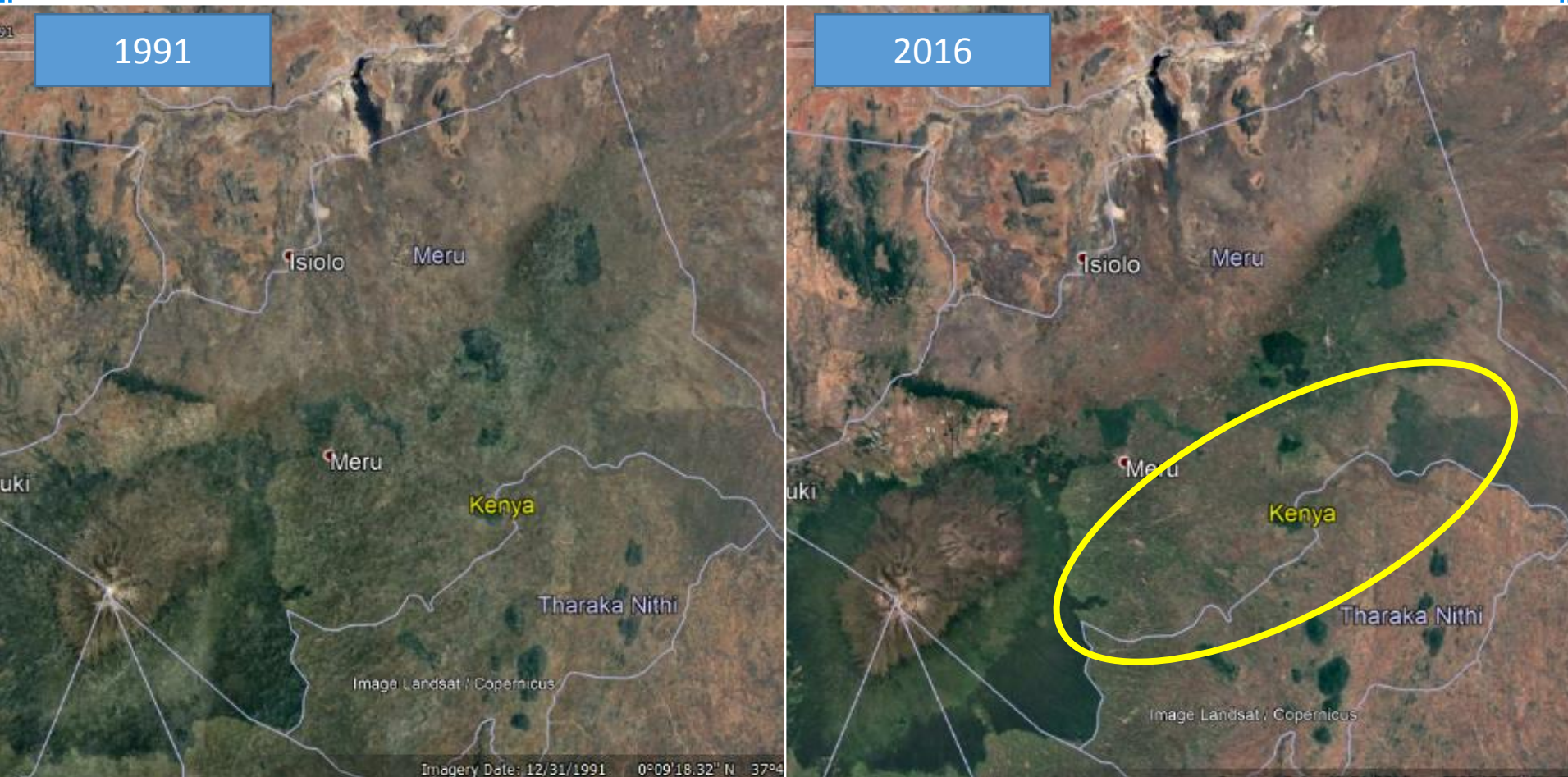
Systematic decrease in annual rainfall

Gap between  $T_{\max}$  &  $T_{\min}$  widening

Average annual temp. increasing

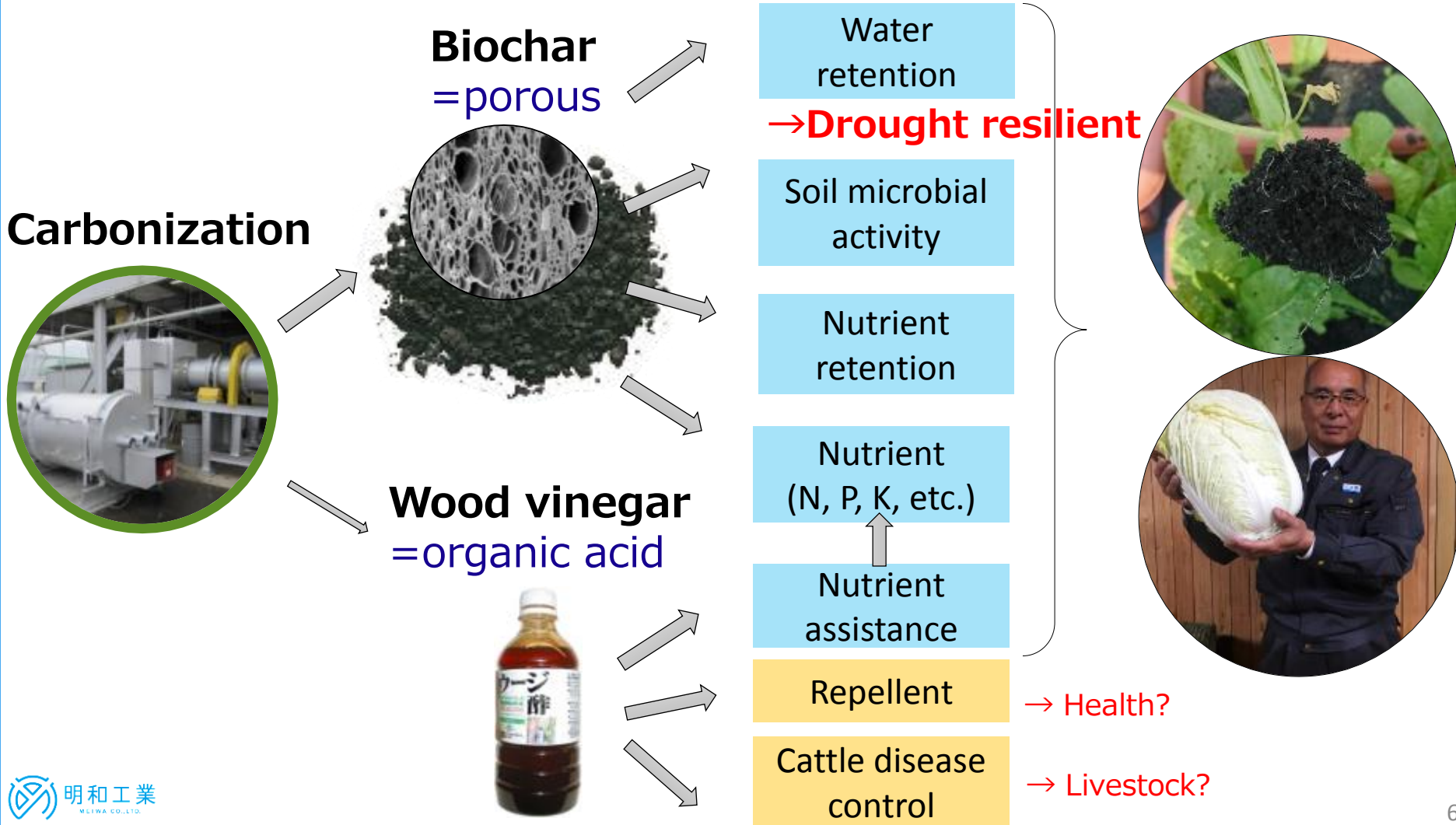


# Challenge of Africa: Climate Change



- Land degradation (low water holding ability)
- Maize yield to reduce by up to 45% (Adhikari *et al.*, 2015)

# Meiwa's Technology: Biochar -As powerful soil conditioner



# Effect of 'Wild' biochar in Kenya



**Dwarfed**

**Healthier**

➔ **Works for Climate-resilient agriculture**

**Then, how can we get  
biochar?**



# Meiwa's Technology: Biomass Carbonization -Mechanism

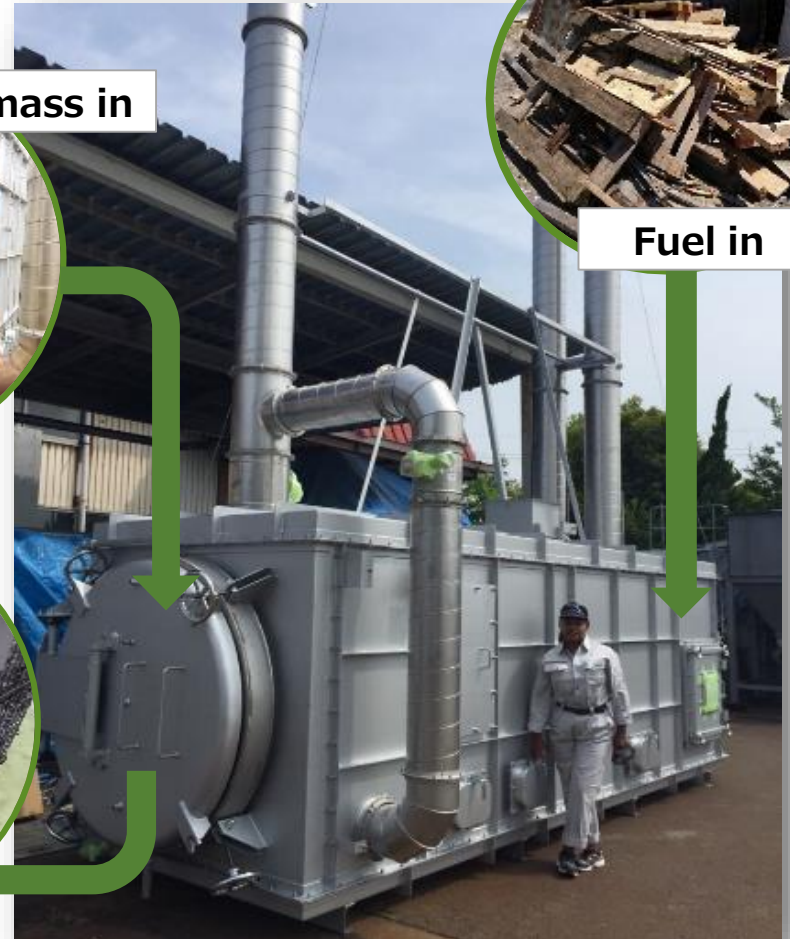
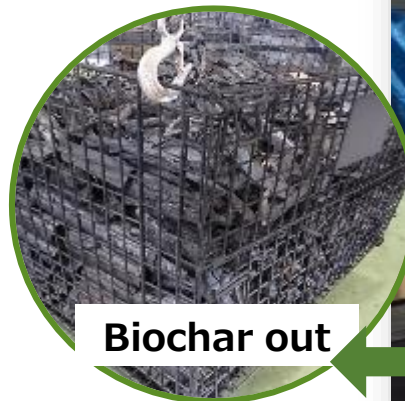
## Carbon box series: batch-type carbonizer

### Strategically downgraded

- Simple to use
  - Quick (2-3days→8hours)
  - Energy efficient
  - Solar powered
  - Smokeless
- \*Pre-drying required



**Deployable  
anywhere**



# Unutilized biomass: Neglected resources

~Bagasse~



# Unutilized biomass: Neglected resources

~Sludge~









80  
KPH

KWE  
339

MERU

ADMINISTRATION

# Unutilized biomass: Neglected resources

~Vegetable residue~



# Try & error, taking place in Kenya

## Process to establish resource circulation system



Organic waste collection  
& screening



Pre-processing (drying, briquetting, shredding, etc.)



Carbonization



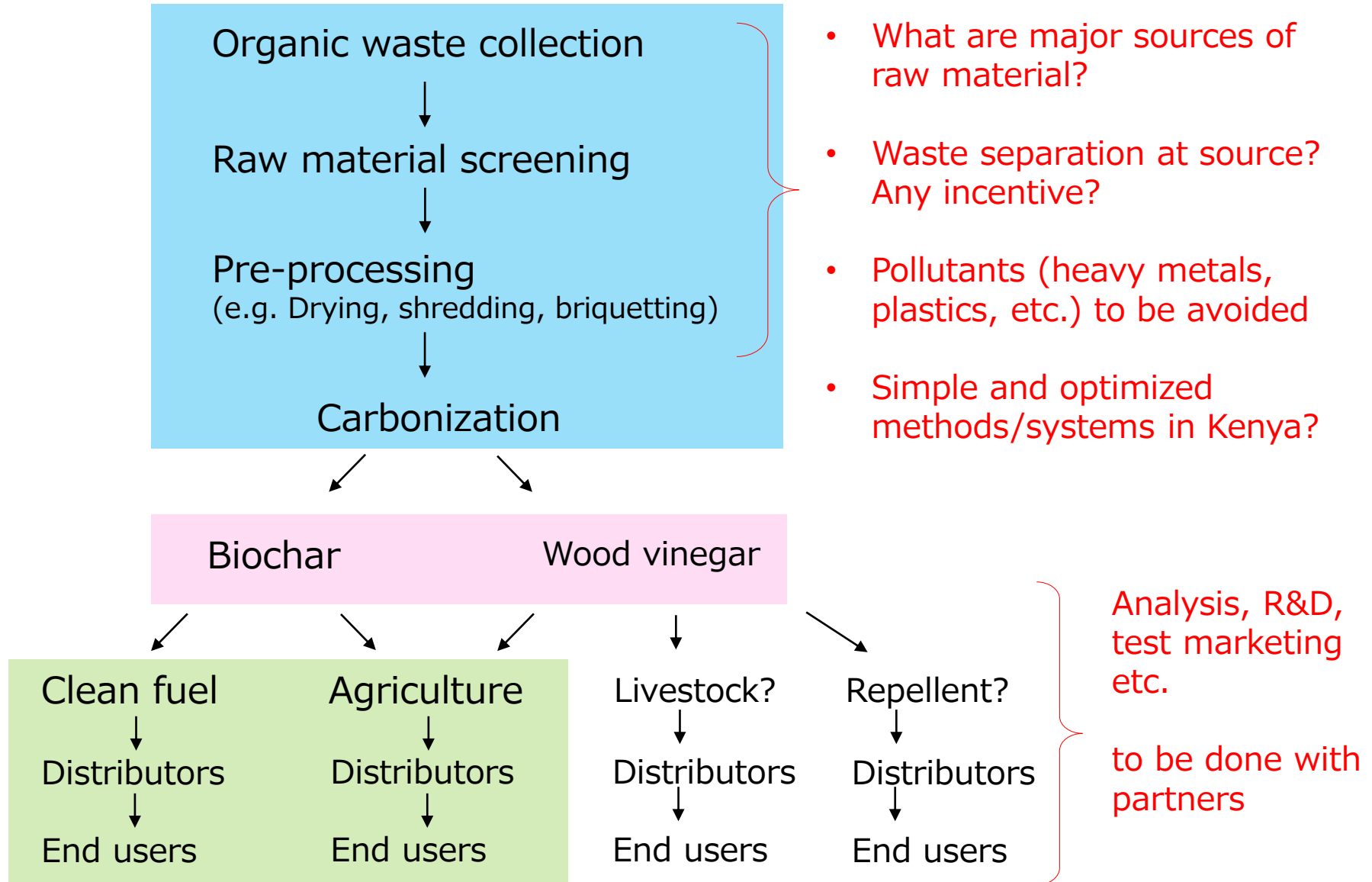
(Post-processing)



Agricultural experiment with  
Biochar and wood vinegar

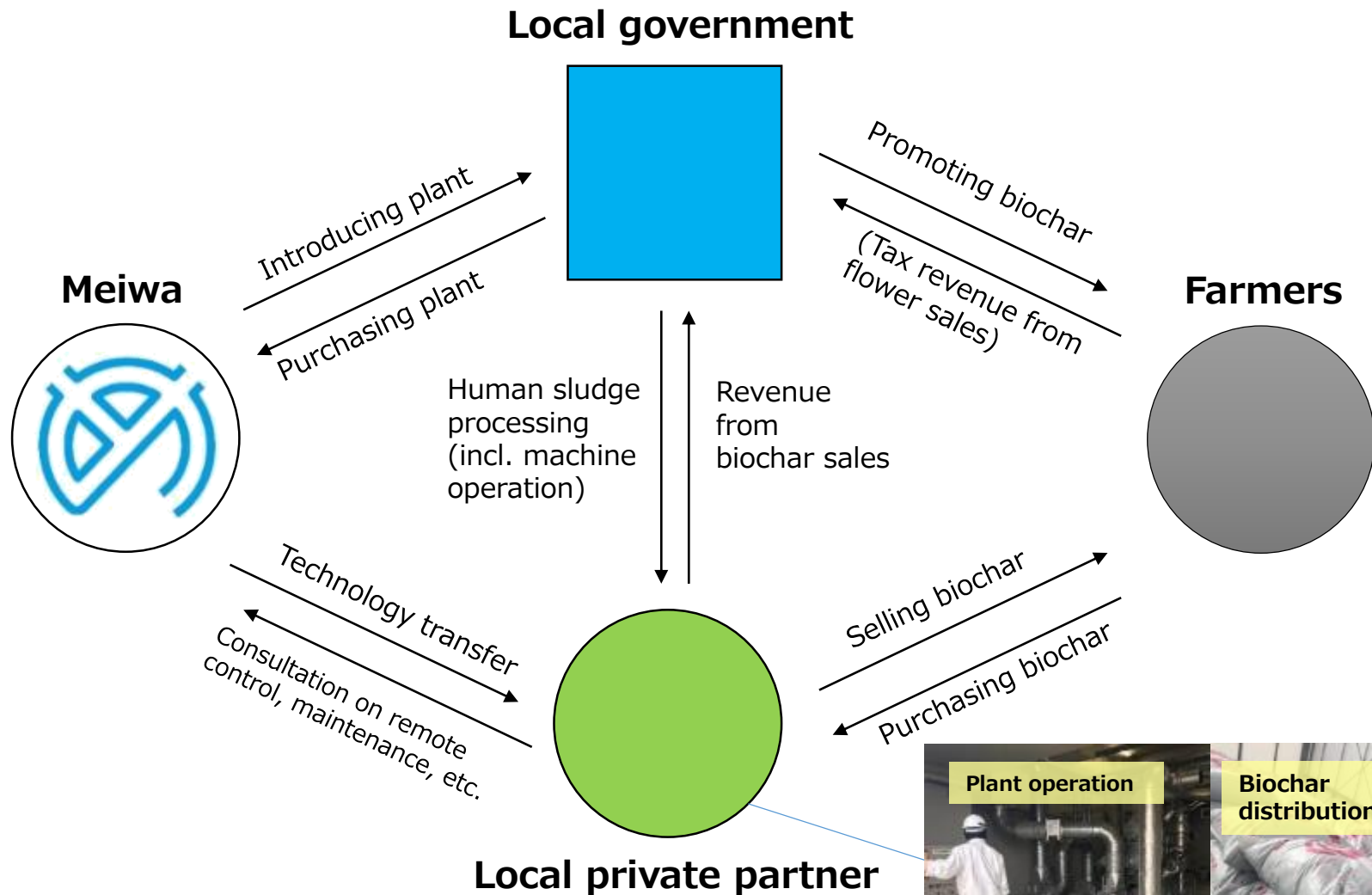


# Key to success = various partners



# Case study in Japan

## - for human sludge



# Biochar : For Climate resilient agriculture

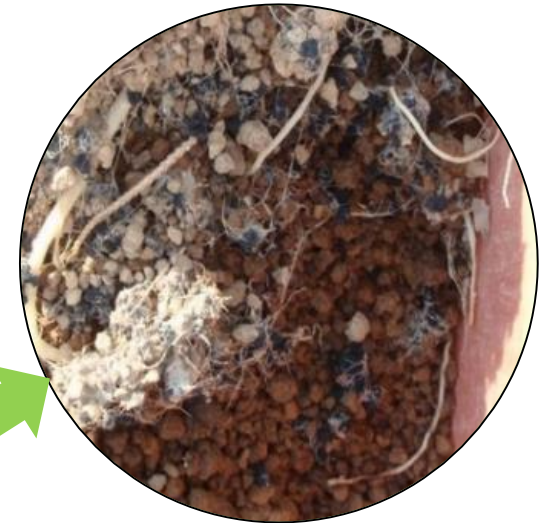
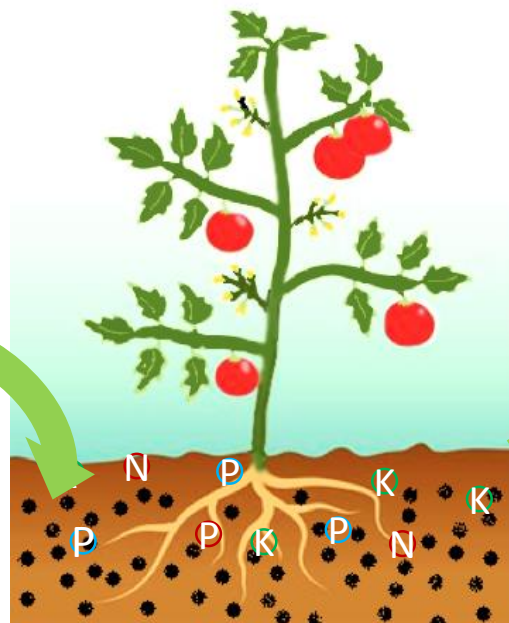
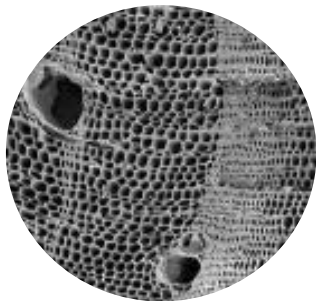
**High water retention**

**Nutrient retention and uptake**

**Microbial Activation**

**Own Nutrient**

**Biochar**



- **Less water**
- **Less top dress**
- **Strengthen stems, etc.**

# Try & error, taking place in Kenya

## Process to establish resource circulation system



**Workshop with  
county government**

**Partnership**



**Biochar experiment with  
university & farmer**



**Introducing technology from Japan**



(, etc.)