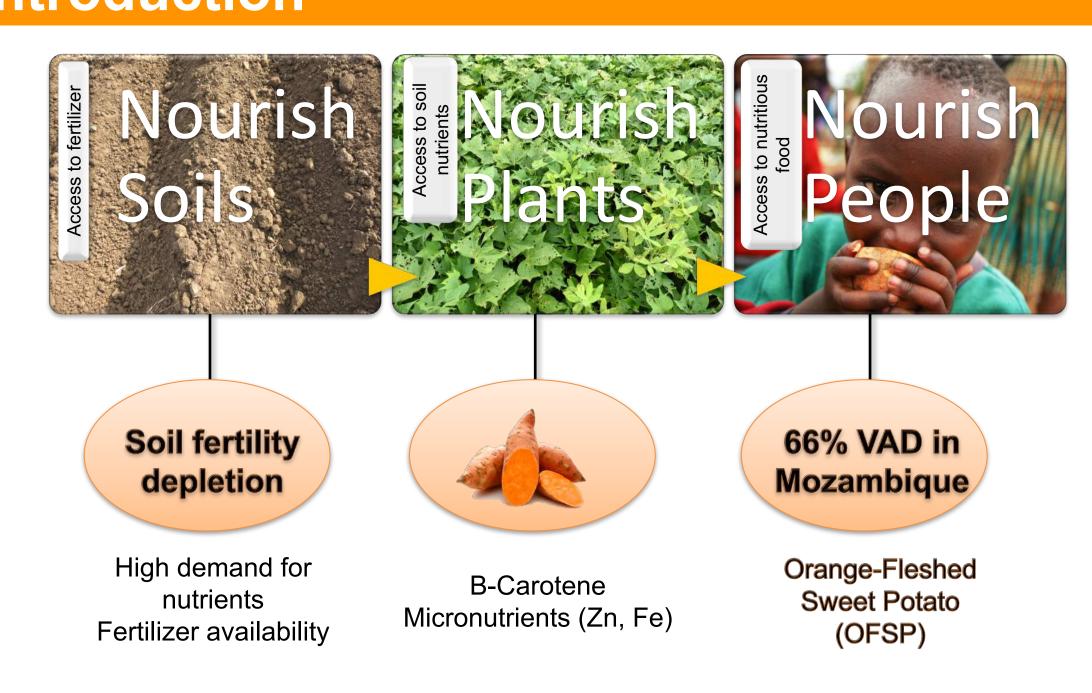
# Organic management of soil fertility for sustainable sweetpotato production

Feola Conz, Rafaela<sup>1</sup>, Pereira, Engil I.P.<sup>1</sup>, Andrade, Maria I.<sup>2</sup>, Six, Johan<sup>1</sup>

<sup>1</sup>Sustainable Agroecosystems Group, Institute of Agricultural Sciences, ETH Zurich; <sup>2</sup>International Potato Cente, CIP – Mozambique

# 1. Introduction



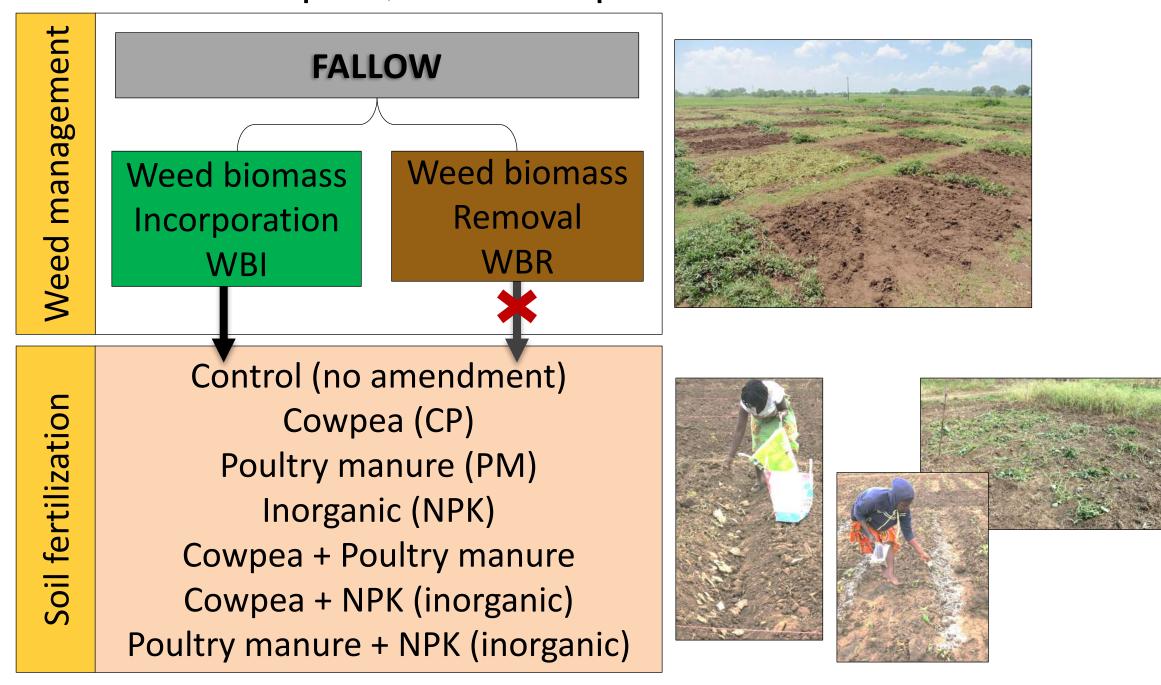
This study investigates organic amendments and soil cultivation practices to determine their potential to ensure nutrient supply to:

- ☐ Improve nutrient use efficiency
- ☐ Improve yield
- ☐ Replenish soil nutrient

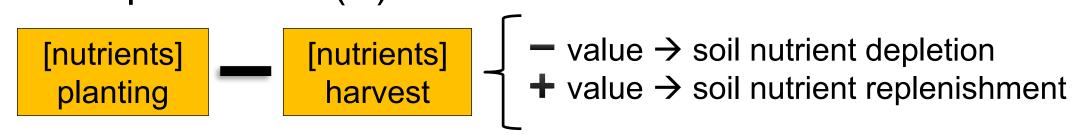
Sustainable cultivation

## 2. Methods

> Field trials in Maputo, Mozambique:



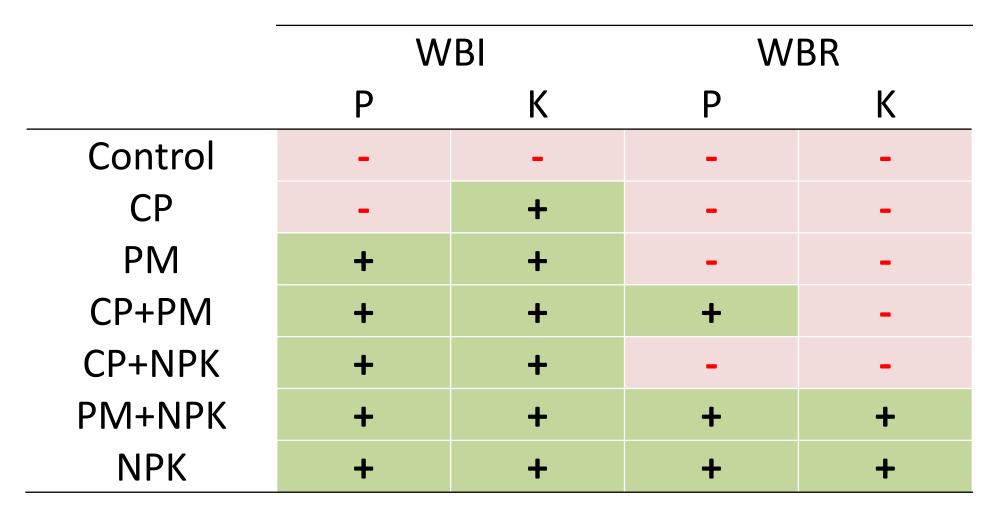
- > Soil samples:
  - Analysis of available soil nitrogen (N), phosphorus (P) and potassium (K):



- Plant samples:
  - Total N, P and K in plant shoot and root
  - Above and belowground yield

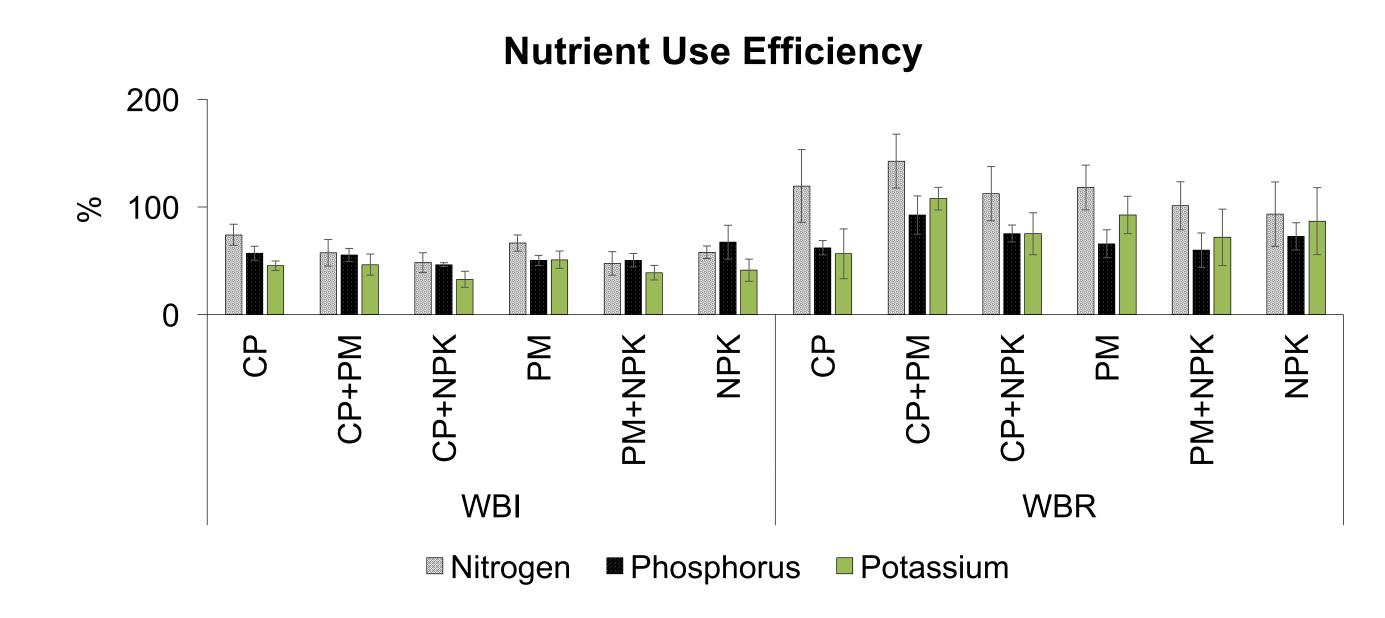
### 3. Results

- > Soil Nutrient Replenishment:
  - Removing weed biomass causes higher soil nutrient depletion
  - Poultry manure has high potential to preserve soil P and K



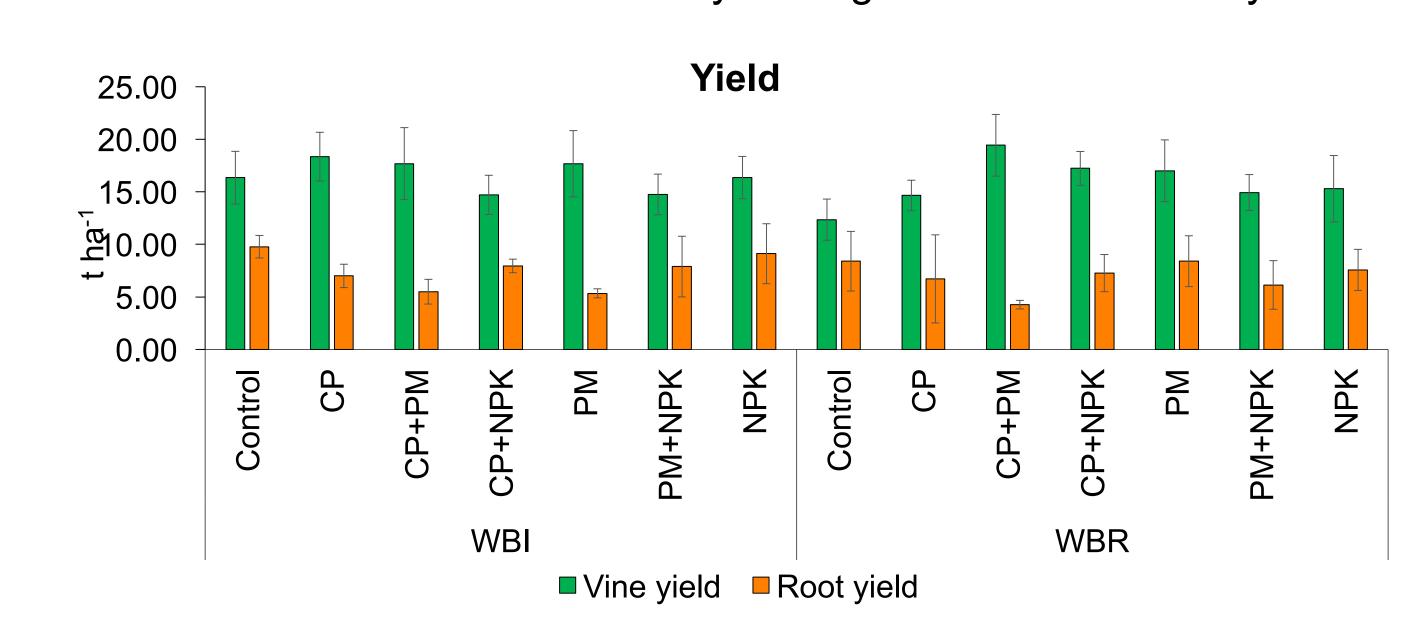
CP = cowpea, PM = poultry manure, NPK = inorganic

- Nutrient Use Efficiency:
  - WBI had notably lowered NUE in comparison to WBR
  - Organic amendments showed the same NUF as inorganic fertilized treatments



### > Yield

No effect of different soil fertility strategies on vines or root yield



# 4. Remarks

- > Weed biomass incorporation preserve soil nutrient proving to be a successful strategy to ensure long-term sustainable cultivation
- > Organic amendments supply nutrient efficiently, achieving the same NUE as inorganic fertilizers
- > Agronomic productivity was the same for both organic and inorganic fertilized treatments

















