

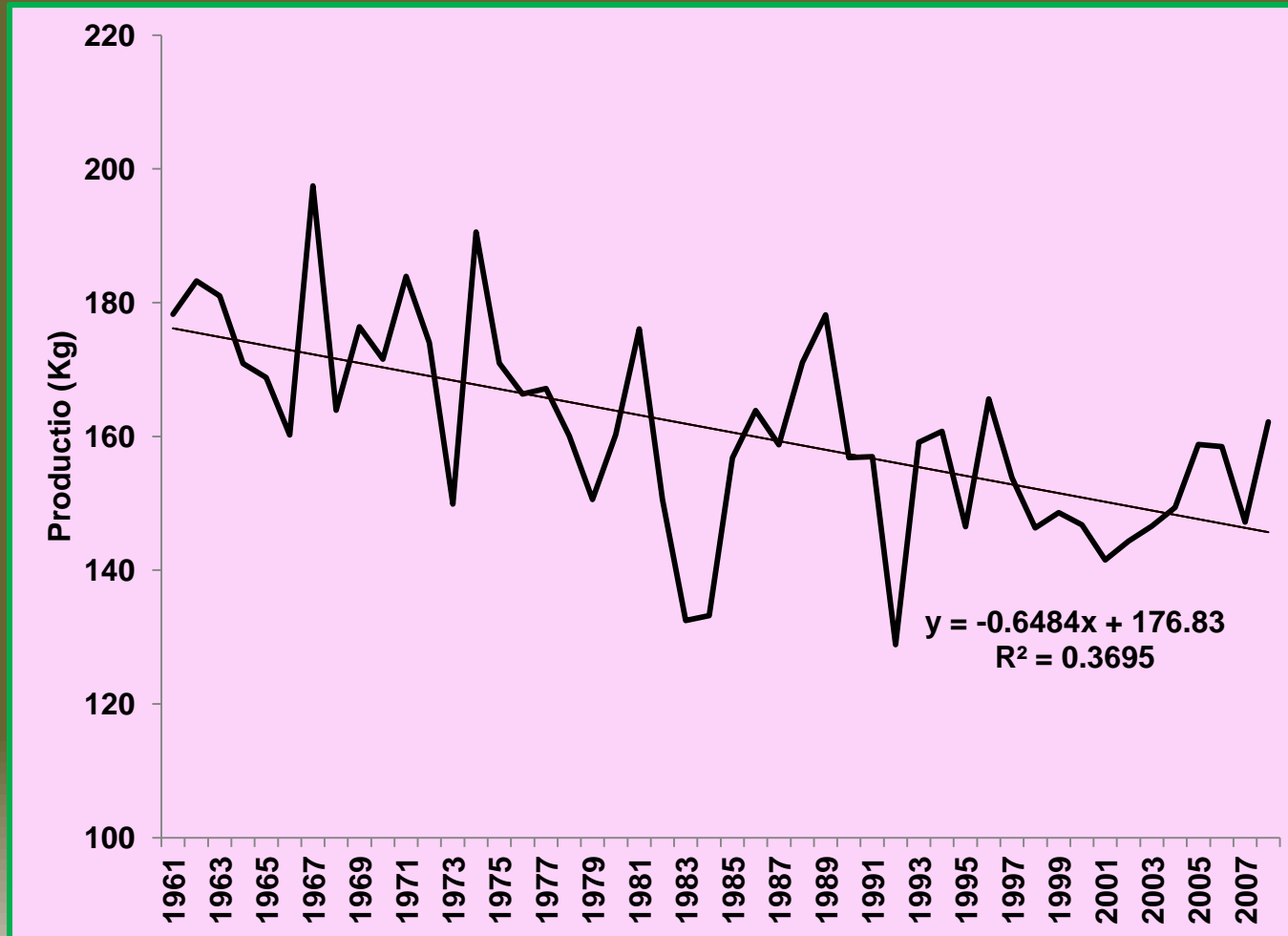
# The Fertilizer micro-dose Technology:

**Hope of farmers in the Sudano-Sahelian  
zones of West Africa and the Potential of  
turning this zone from grey to green.**

**<sup>1</sup>A. BATIONO, <sup>2</sup>D. SOGODOGO, <sup>3</sup>G. MAMADOU, <sup>4</sup>J. S. TAONDA AND <sup>5</sup>S. MAHAMAN.**

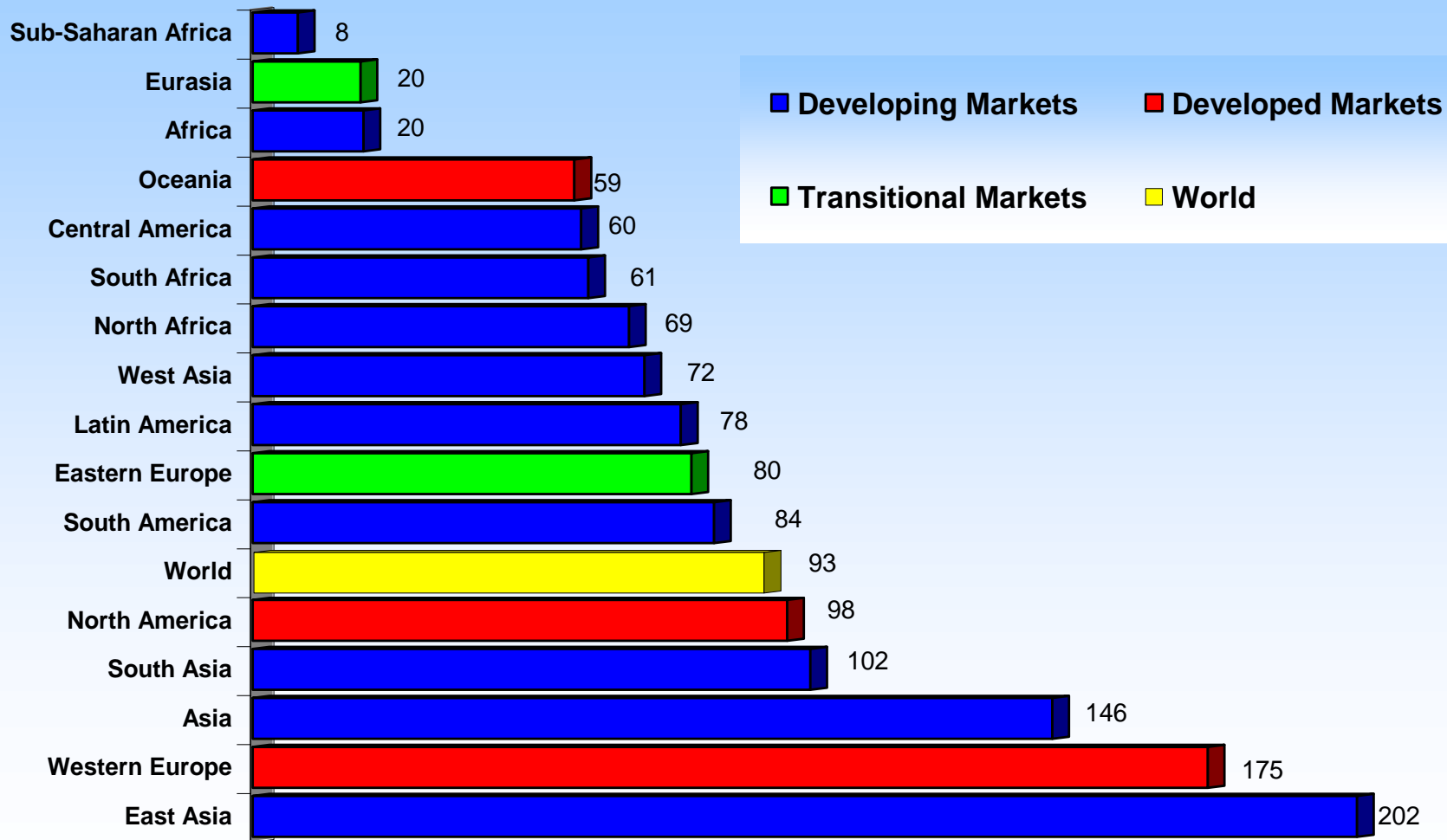
# Cereal productivity:

Cereal production per capita in SSA

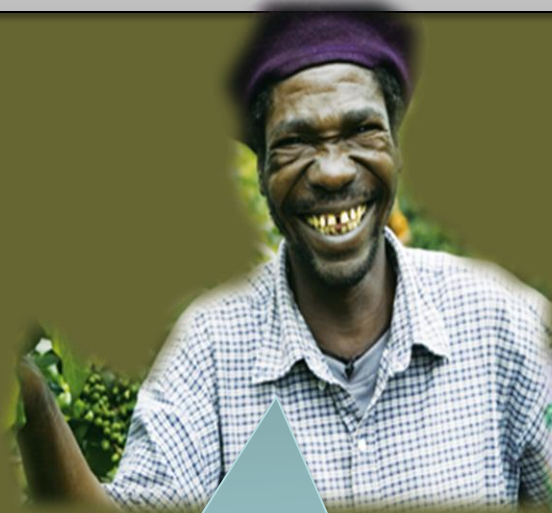


Source: FAOSTATS (2010)

# Per Hectare Fertilizer Use by Markets, 2002/03 (kg/ha)



# Fertilizer



**Before CFA  
Devaluation:**

**A bag of NPK Fertilizer use to be  
\$4.00**



**Today:**

**A bag of NPK fertilizer is  
selling at \$32.00**



# Economic Analysis of the Microdose Technology in Mali on Sorghum in 2010 ? Season

Treatment	Control	Microdose	Recommended
Quantity of fertilizer	0	20kg DAP/ha	100kg DAP and 50 ha area per hectare
Yield (kg/ha)	823	1744	1656
Benefit / Cost ratio at Harvest	0	12	1
Benefit Cost Ratio 6 months after Harvest	0	19	2

# Success story of Microdose: My experience

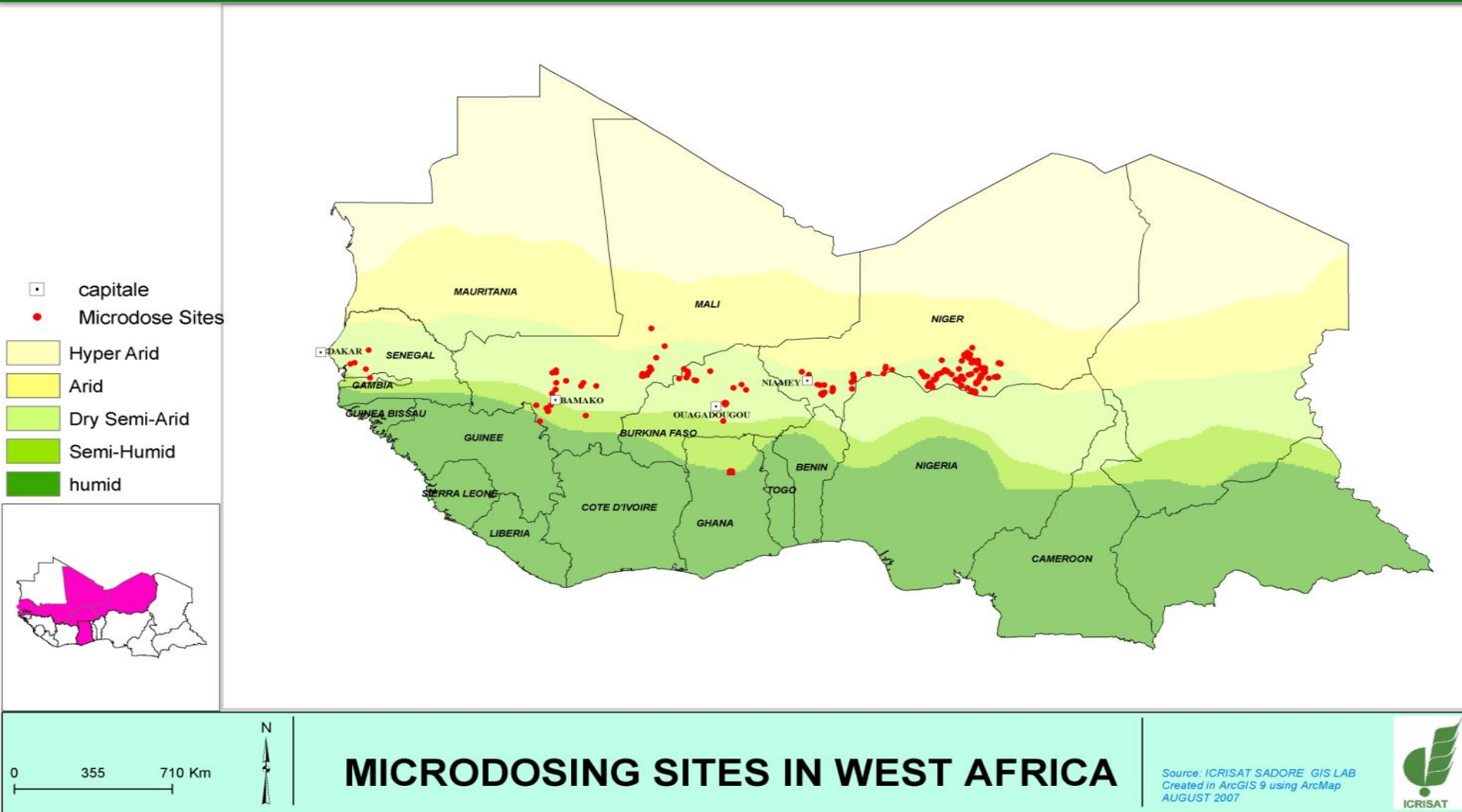
Adaptation of fertilizer recommendation to local conditions with strategic application of  $4\text{kg P ha}^{-1}$

## Other Successes:

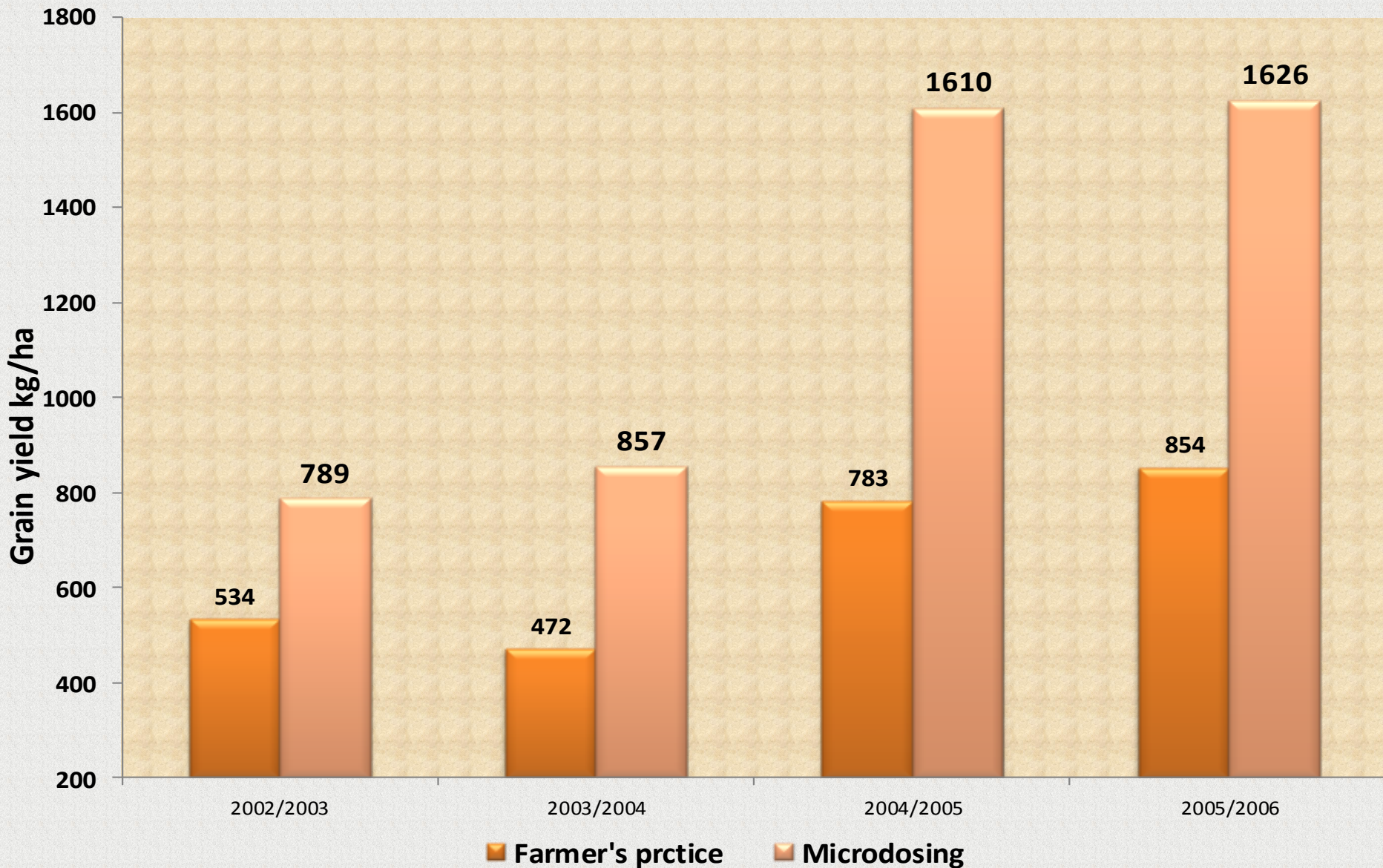
- Local fertilizer packaging and blending
- Target input Vouchers
- Legume-cereal rotation or intercrop
- Participatory approaches
- etc...



# Micro-dosing sites in WA



# Sorghum grain yield as affected by microdosing, Burkina Faso, 2002 - 2006



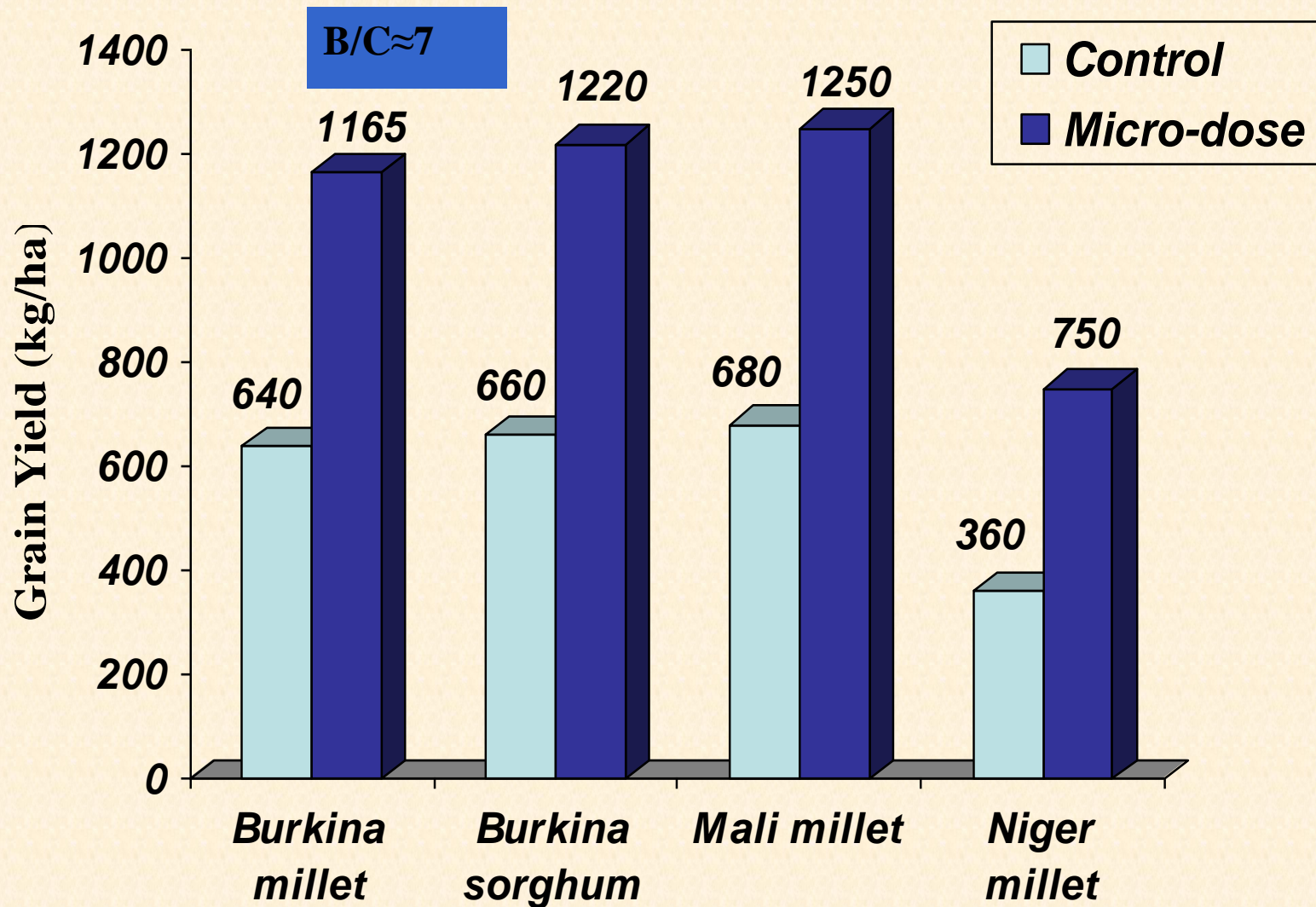


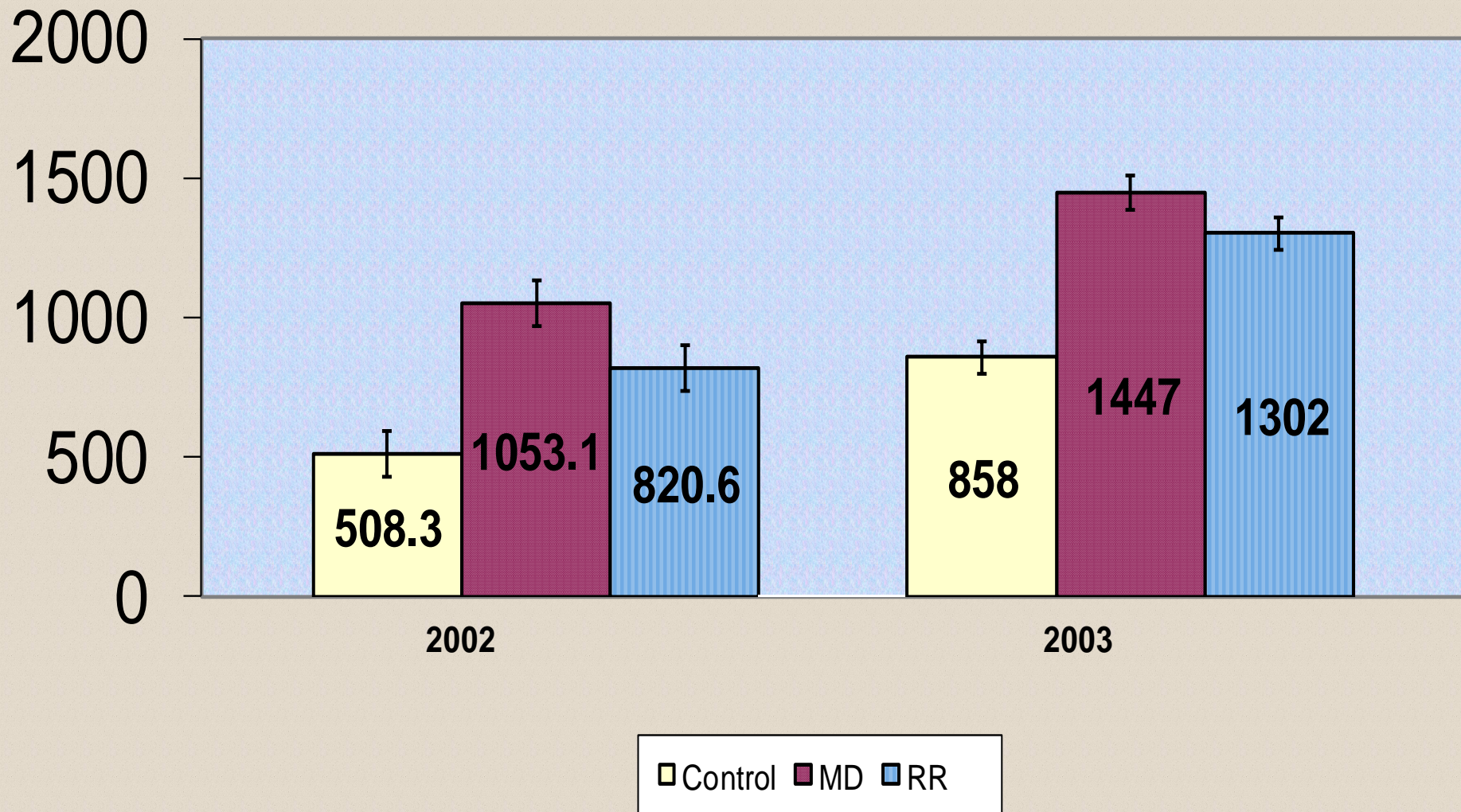


**Microdose**

**Control**

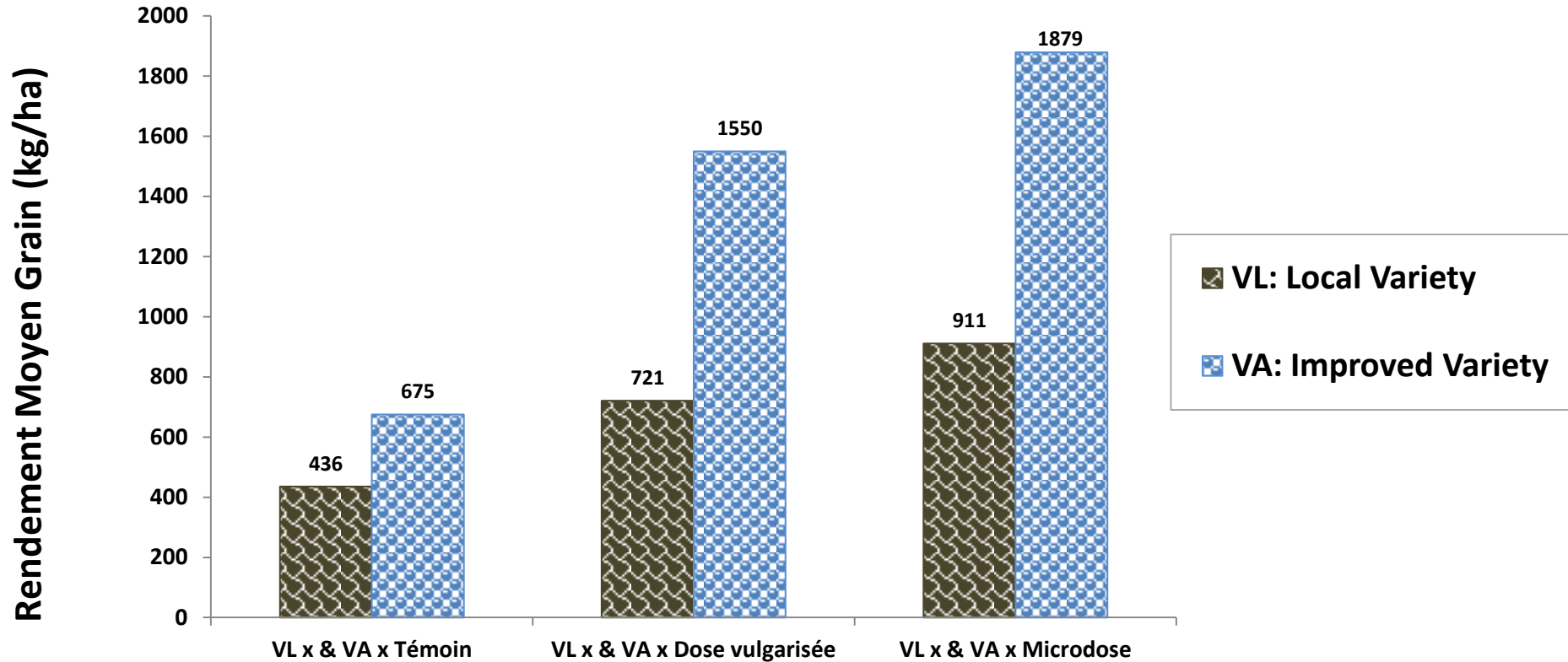
# Cereal responses to micro-dose in WA





**Grain Yields of sorghum as affected by Microdosing, Mali**

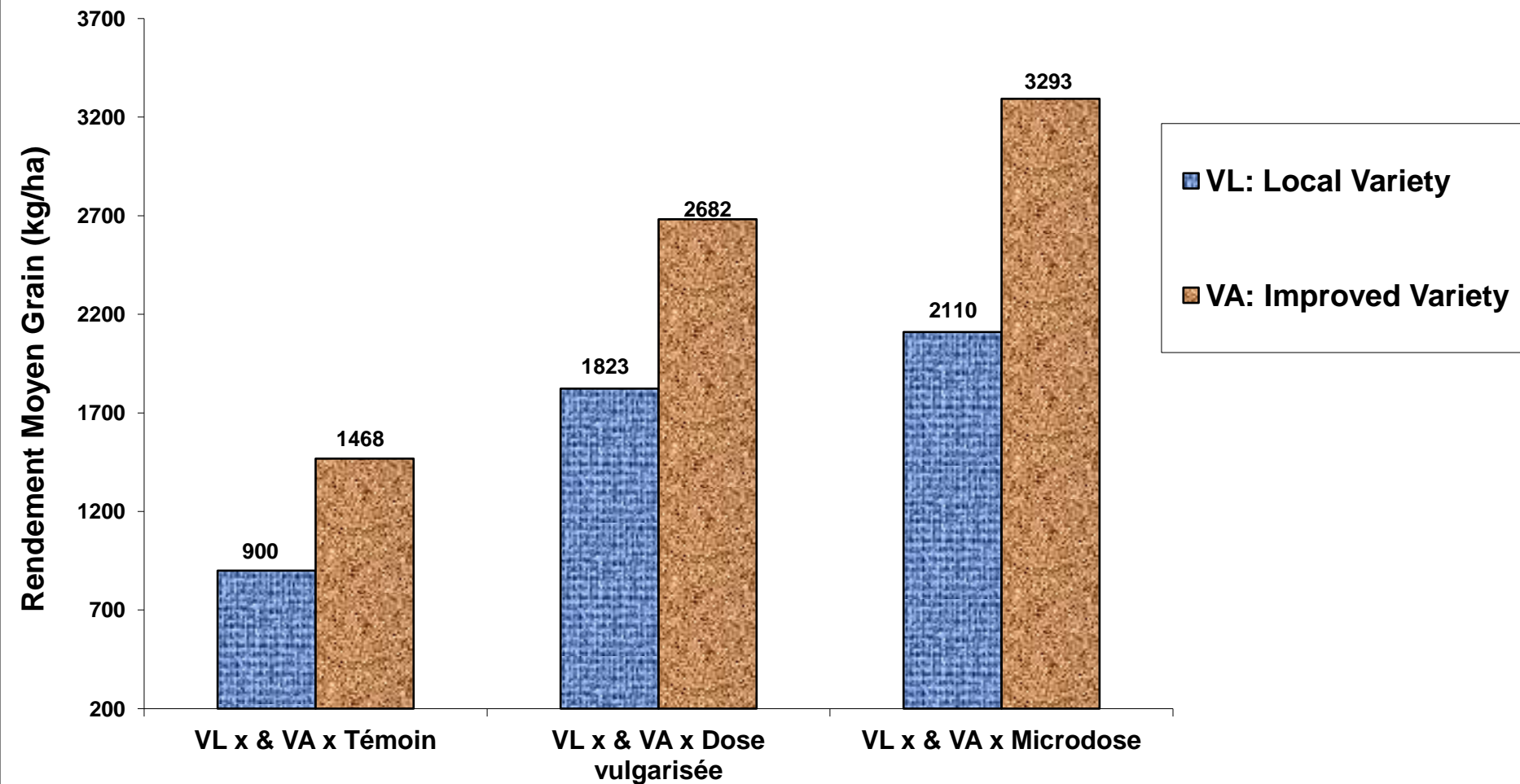
## Effect of recommended and micro-dose treatment on improved (VA) and local (VL) varieties of sorghum grain yield



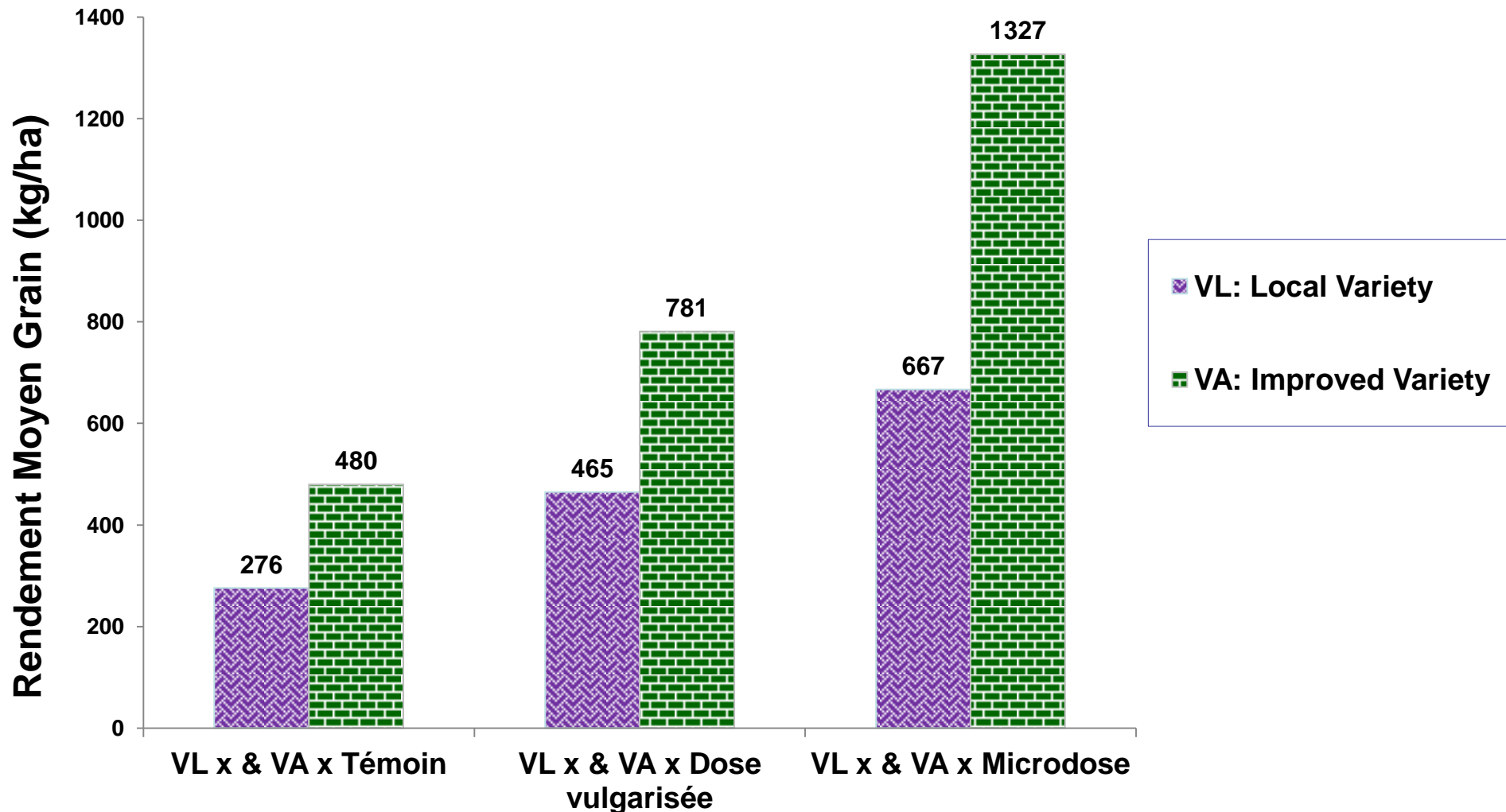


Effect of microdose application on improved sorghum varieties on a demonstration plot in Nagreongo village, Oubritenga Province, Burkina Faso, at the flowering stage in the 2009 rainy season

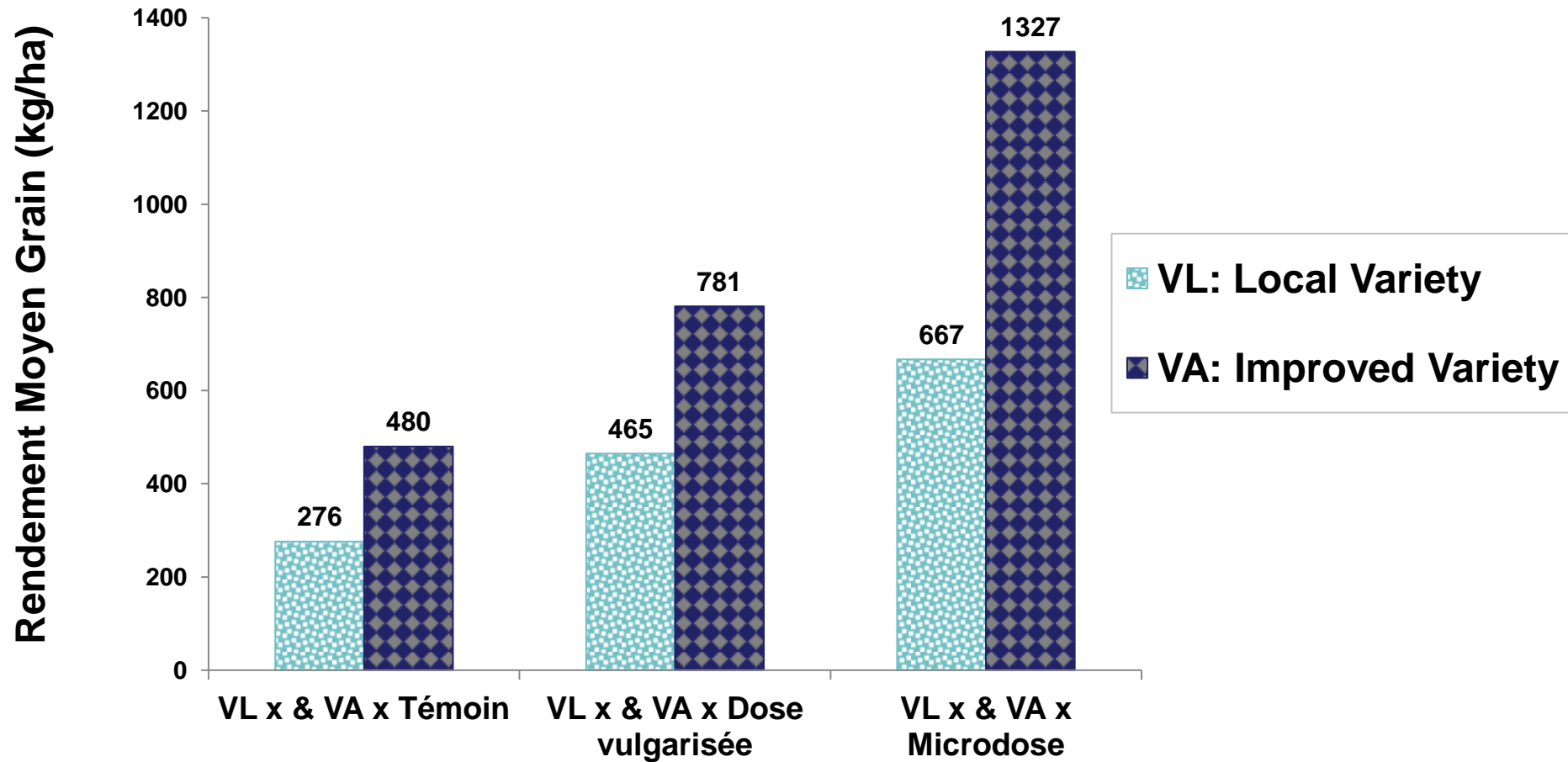
## Effect of recommended and micro-dose treatment on improved (VA) and local (VL) varieties of maize grain yield.



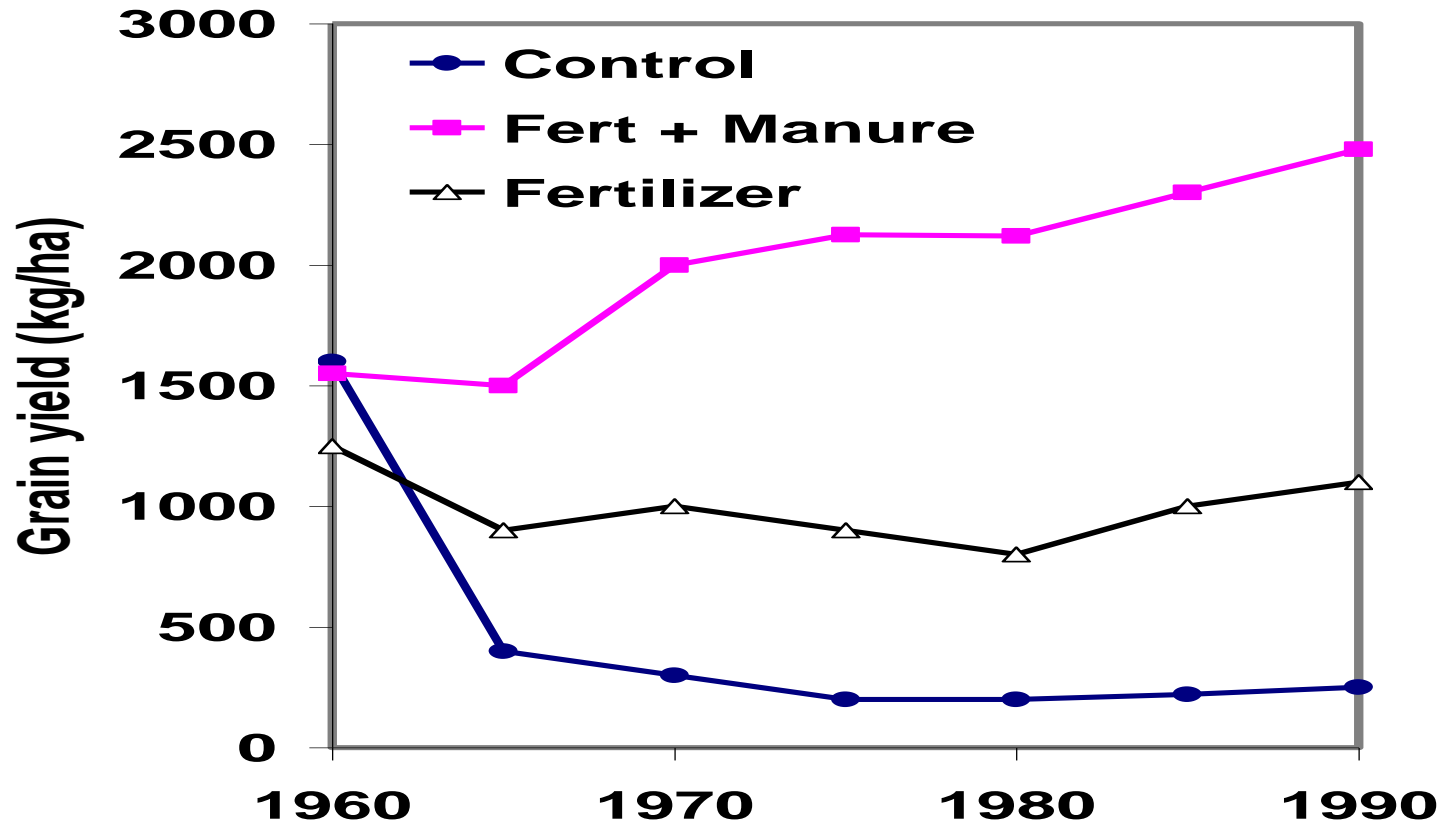
# Effect of recommended and micro-dose treatment on improved (VA) and local (VL) varieties of cowpea grain yield



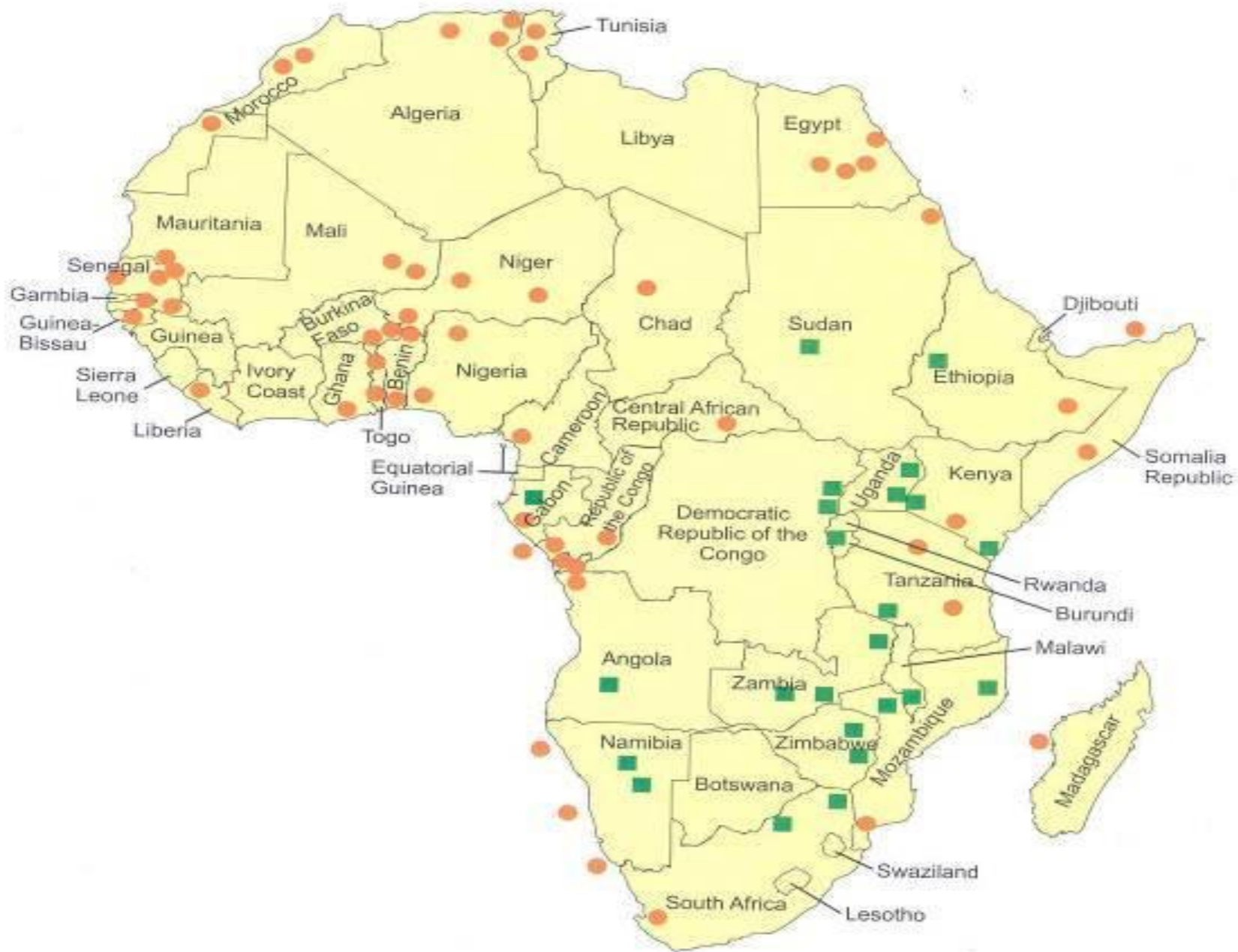
# Effect of recommended and micro-dose treatment on improved (VA) and local (VL) varieties of pearl millet grain yield







**Sorghum grain yield as affected by mineral and organic fertilizers over time.**



# Phosphate rock deposits in SSA

- Sedimentary
- Igneous

*The ground view: A traditional field with a microdosed field in the background*



GREY

To

GREEN



4 kg P per ha  
with millet seed

**'Coke Cap'  
Microdosing**

# IT WILL COST ABOUT ...

## THE RELATIVE COST OF FOOD AID

**\$135**

to give farmers the fertilizer, seed and support to grow an extra tonne of maize.

**\$320**

to buy a tonne of maize locally and distribute it where needed.

**\$812**

to buy, ship and distribute a tonne of US maize in Africa.

**\$135** to give farmers the seeds fertilizers, and support to grow an extra ton of cereal

**\$320** to buy a ton of cereal locally in Africa and distribute to the needy within Africa

**\$812** to buy, ship and distribute a ton of cereal as food aid from the US to starving Africans

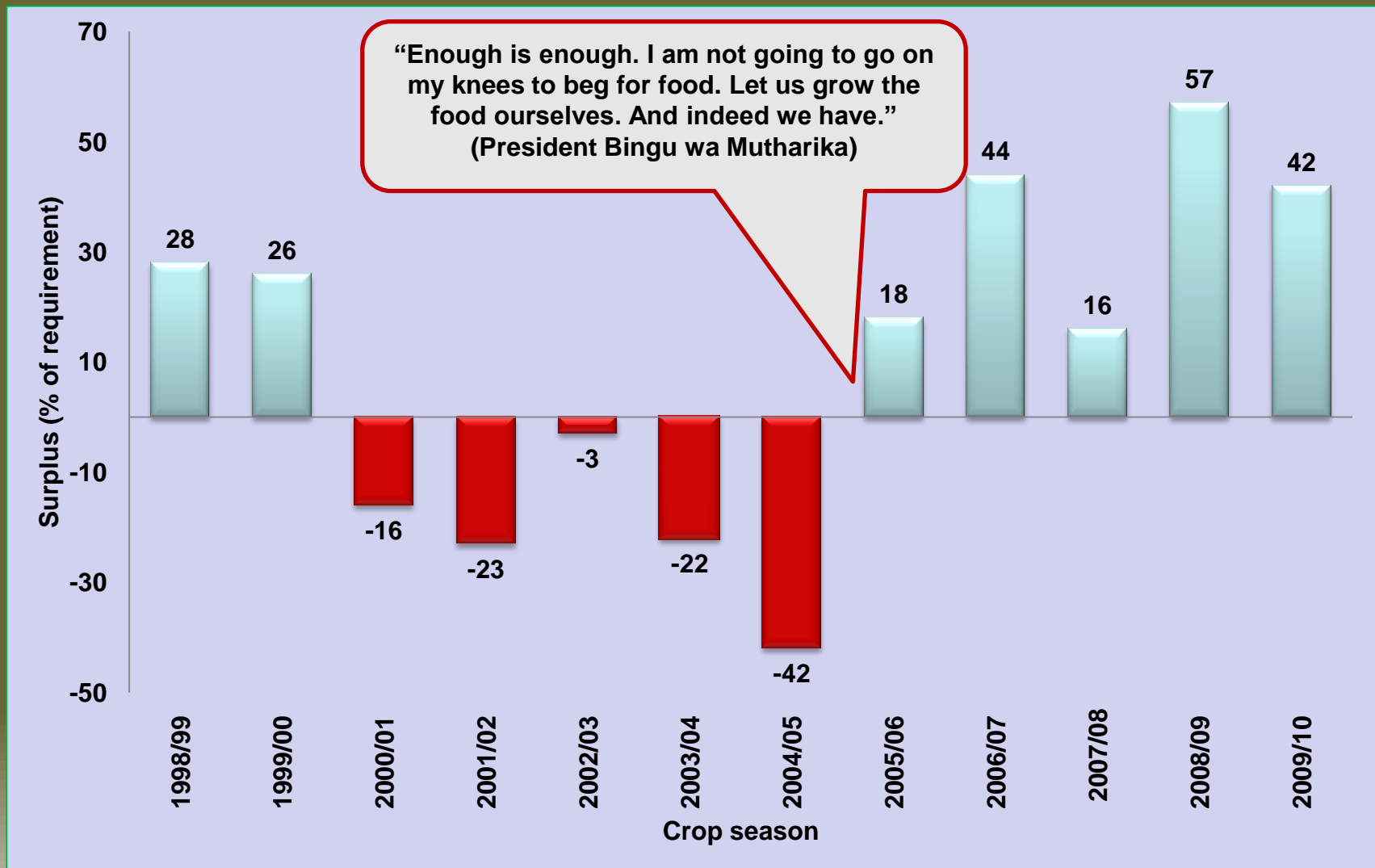
Source: Sanchez, P. 2009: A smarter way to combat hunger. Nature, 458, 12.

# Upscaling the Microdose Technology

**Niger Famine of 2005 could have been avoided with microdose technology**

- **Food shortage was 11%**
- **Investment of \$20 million in 2004 cropping season would have save:**
  - ❖ **Donors: \$ 80 million in emergency aid**
  - ❖ **Consumers: \$70 million**

# The Malawi experience



# Policy change

In Mali, for the 2011 cropping season, good results on microdose use has led to subsidize fertilizer on millet and sorghum



# Innovative Financing

- Only 1% of total bank financing goes to agriculture in Africa, yet the sector accounts for 70% of all employment and 25-50% or more of the GDP of African economies.
- In Ghana, AGRA invest with MIDA \$5,000,000 and \$10,000,000 to leverage about \$150,000,000 for investment in the Agricultural value chain

**The paradox of markets in rural Africa: “We don’t want Coca Cola, we are looking for seeds and fertilizers”**





Thank you