

# **Foundations of a Strategy to Address the Agricultural Productivity-REDD Nexus in the Cocoa Belt of West and Central Africa.**

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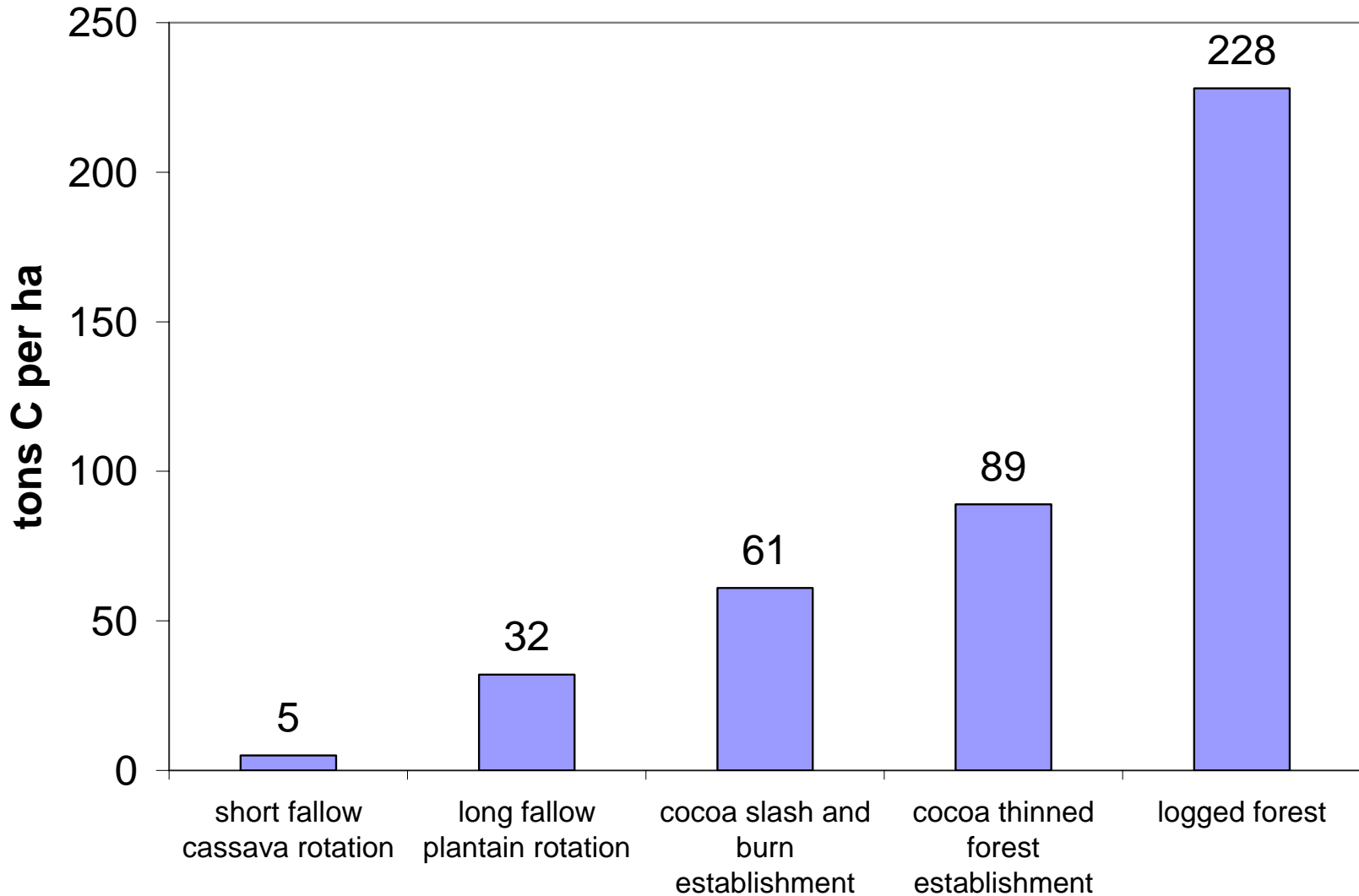
# Meet Kofi and Abena—producers of cocoa, plantain and cassava

- Kofi and Abena used to produce cocoa and other crops in the Ashanti Region but their land wore out and it was abandoned.
- They migrated to the Western region.
- Kofi now produces cocoa on 4 ha of land that was once part of the Guinea Forest.
- Plantain on 1 ha of land
- His wife, Abena, produces cassava and other commodities in a mixed food crop field that is approximately 0.5 ha

# Kofi and Abena's Livelihood

- Kofi and Abena have never had any interaction with extension
- Are unable to purchase pesticides to fight cocoa black pod disease and cocoa mirids and have never used fertilizer on any of their crops.
- The nearest input dealer is a day's journey in the rainy season
- Can not borrow to finance their efforts.
- Their only capital inputs are simple hand tools.
- The forest is their source of plant nutrients.

# Mean Carbon Stocks In Smallholder Agricultural Mosaics



Source: ASB Summary Report and Synthesis of Phase II in Cameroon

# Baseline Information

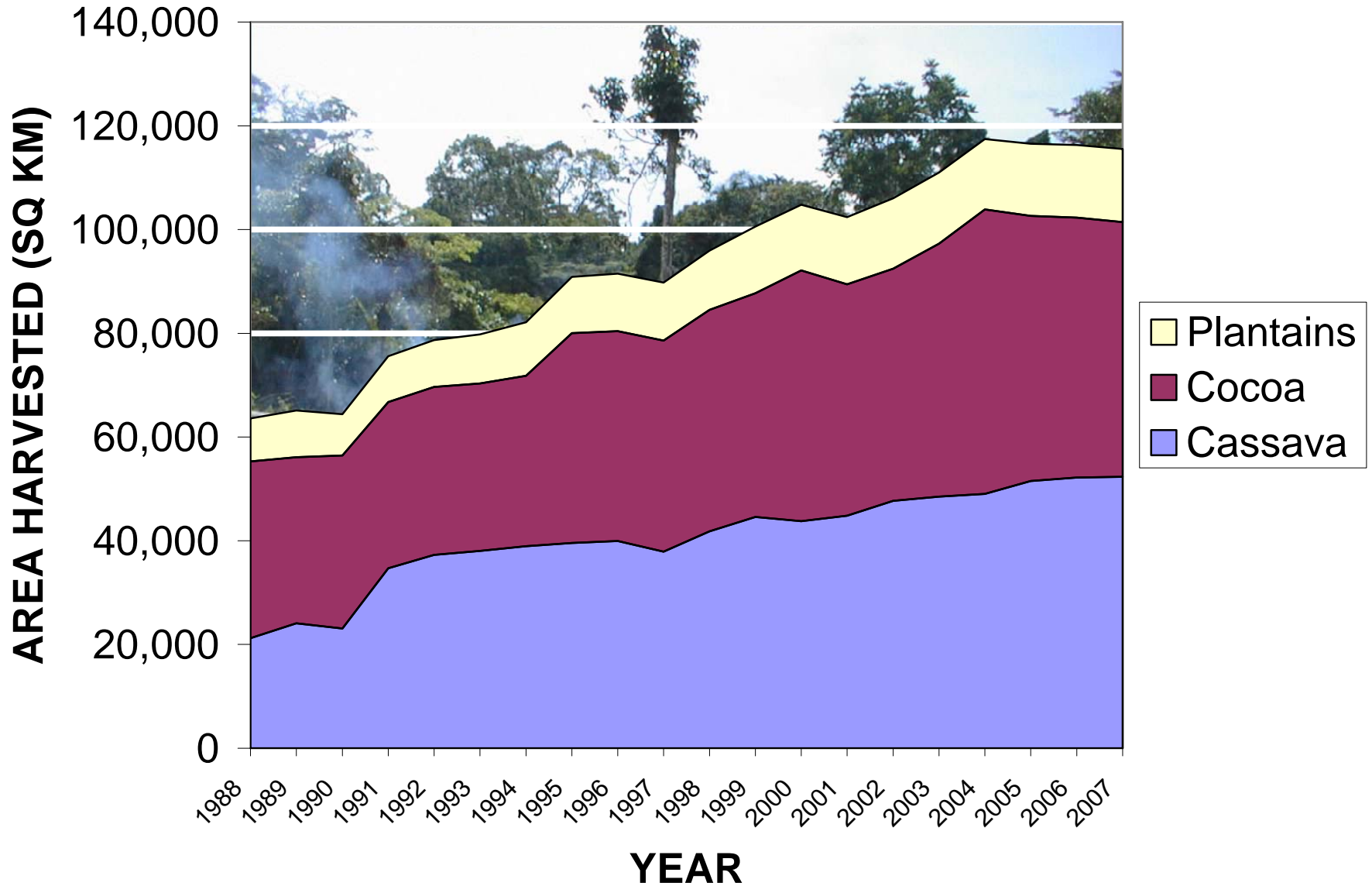
- Over 2 million households in Nigeria, Cameroon, Ghana and Cote d'Ivoire are producing cocoa in situations like Kofi and Abena
- The number of cassava and plantain producers are even greater in these countries.
- Production of all three commodities has grown by about 4% p.a. since 1988 but mostly as a result of area expansion (3% p.a.) and less than 1% p.a yield growth.

# Forest baseline

- The Guinean Forests of West Africa once covered nearly 1.3 million sq. km (equal in size to the combined area of Germany, France and the United Kingdom). Only 126,000 sq km remain.
- The West African forest was identified as a biodiversity hotspot twenty years ago (Myers, 1988).
- 1,900 endemic plant species and more than a quarter of Africa's mammals, including 20 species of primates reside in the scattered remnants of these forests (Conservation International, 2007).

# Since 1988 a 56,300 sq km increase in area harvested

in Ghana, Nigeria, Cameroon, Cote d'Ivoire



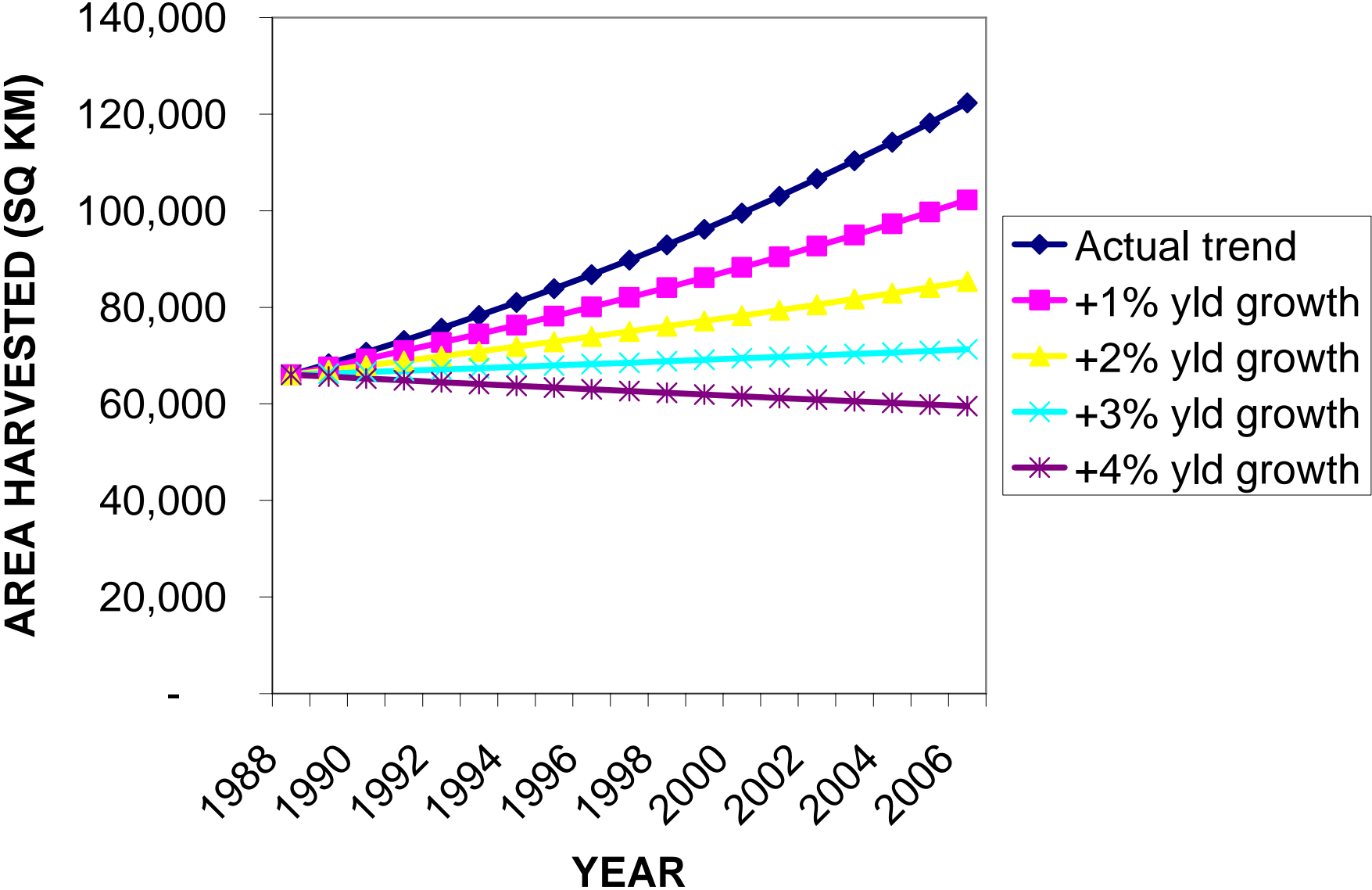
Source: FAOSTAT 2008

# A what if scenario

- What if the African Union's Comprehensive African Agriculture Development Program (CAADP) had been initiated and successfully implemented in the 1980s with positive impact on yields?



# Estimated increase in area harvested at different growth rates in yields in Ghana, Nigeria, Cameroon, Cote d'Ivoire



# Total deforestation that would have been avoided (1988 to 2006)

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yield growth (addition to trend)	avoided deforestation (sq km)
plus 1%	20,155
plus 2%	36,990
plus 3%	51,051
plus 4%	62,796

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# Biodiversity Co-benefits

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Yield Growth	No. of Avoided Species Extinctions
+1%	3,700
+2%	6,800
+3%	9,400

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Source: Rates of species extinction per unit area of tropical deforestation taken from Edward O. Wilson. 1992. *The Diversity of Life*. Harvard University Press

# What would be the annual size and value of the avoided emissions?

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yield growth (addition to trend)	avoided emissions (millions T)	Value (billions USD\$)
plus 1%	171	\$ 2.6
plus 2%	322	\$ 4.8
plus 3%	455	\$ 6.8
plus 4%	573	\$ 8.6

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# Why Agricultural Productivity as a REDD Funded National Objective?

- Already a national and regional objective (e.g. CAADP-AU), but public finance a constraint
- Positive impact on food security
- Growth in farm incomes
- Rewards innovation
- Directly addresses the key driver of deforestation in West Africa, i.e. extensive agricultural practices

# What to Invest In?

- Public sector—
  - Research and extension capacity,
  - Roads,
  - Rural health and education including vo-agriculture
  - Improved access to markets,
- Policy reform
  - Reduced barriers to regional and international trade
  - Land tenure reform
  - Rule of law
  - On-farm rights to planted timber

# What to Invest In?

- Private sector
  - Fertilizer production and distribution capacity
  - Market infrastructure (warehouses, transport, grades and standards)
  - Capital tools—low cost Indian and Chinese agricultural machinery and traction
  - Agricultural finance

Thank you for  
your gracious attention

