



Ensuring Access to Plant Resources for Meeting Market Demand

Zac Tchoundjeu and Antoine Kalinganire
ICRAF West and Central Africa Region

First Africa Dry Lands Week, Dakar, 10-17 June 2011



ARTICULATIONS

- Why high-value indigenous fruit trees and medicinal plants are not widely used in regeneration programs?
- Could Participatory Tree Domestication change the perception of indigenous tree species?
- Could livelihood of local population being improved by production and marketing agroforestry species?
- Could participatory tree domestication increase active participation of rural farmers to Great Green Wall Program



2008 World Development Report

(www.worldbank.org/wdr2008)

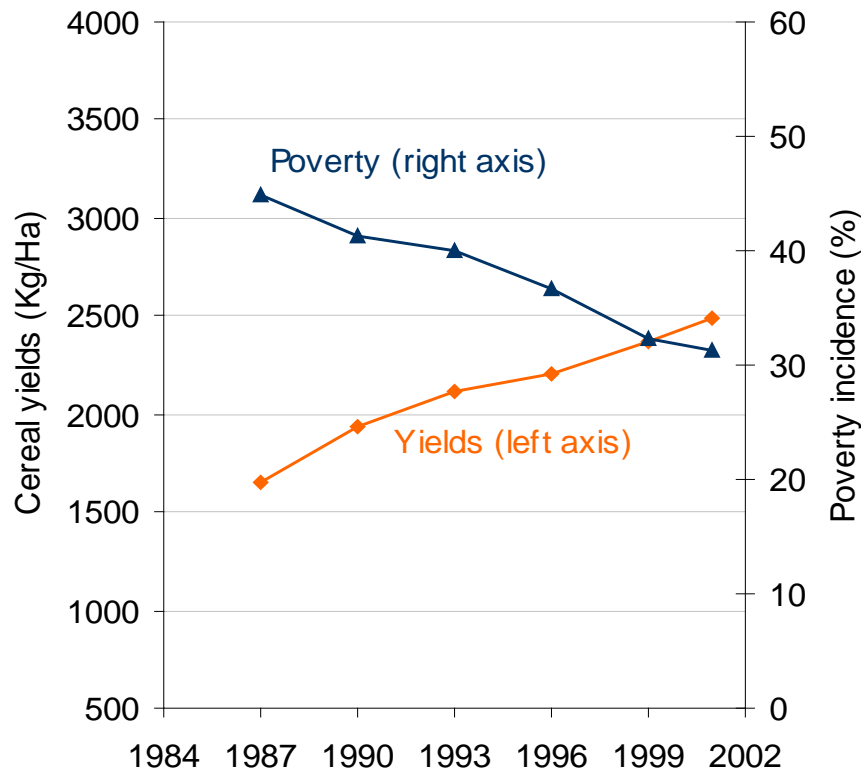
Agriculture fundamental to sustainable development in Africa

- Lead sector for overall **growth, poverty reduction** and **food security**
- It is happening — growth **accelerating** with better incentives
- Focus must now be on increasing smallholder **productivity**
- Approach **tailored** to diverse rainfed farming systems

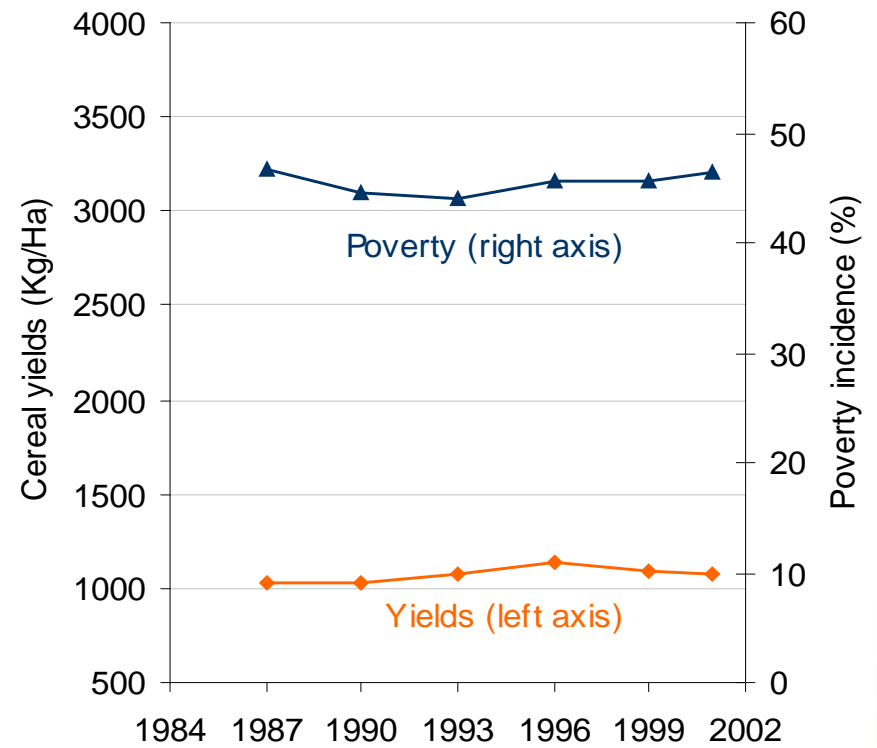


Increase Yields, Decrease Poverty

South Asia



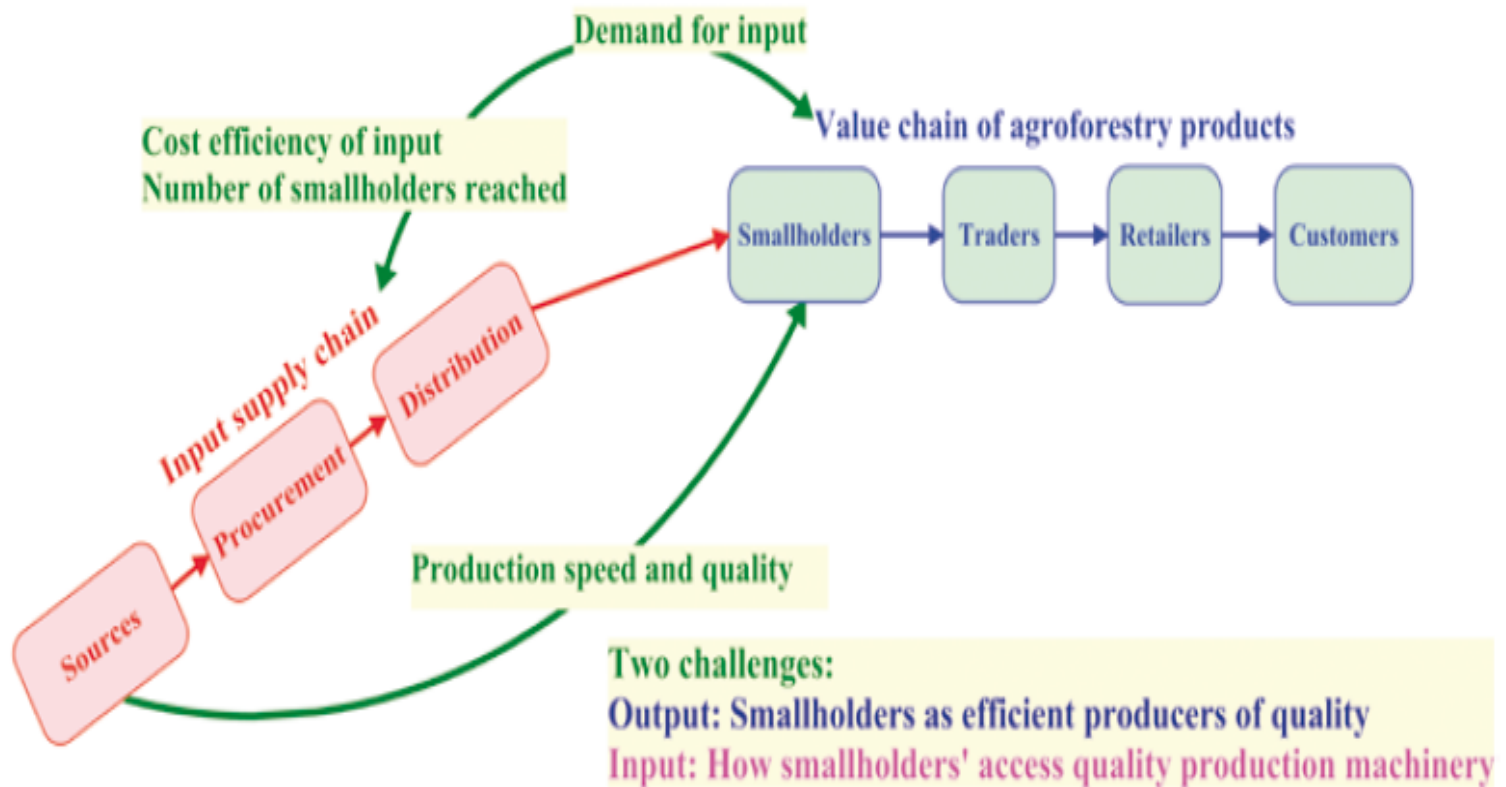
Sub-Saharan Africa:



Source: *Agriculture for Development*, World Development Report, World Bank, 2008.

Seed and seedling supply systems

Input supply and value chains in smallholder agroforestry



© Lilasa & Mestrup ICRAF/FLD

Figure 2. Input supply and value chains in smallholder agroforestry. Improvements - and losses - in the input supply chain are multiplied in the value chain

Key Problems: Management Natural Resources



- **over-centralization** of tree seed supply at national levels
- **inadequate tree germplasm conservation** programs (national and international)
- **scarcity of tools and practices** for on-farm tree propagation and management
- **low regional coordination** in introduction, testing and release of tree germplasm.
- **scarcity of well-documented,** characterized and comprehensive tree germplasm collections for domestication and conservation





ICRAF's INNOVATIVE APPROACH: the Participatory Tree Domestication



Participatory Tree Domestication (PTD)

Put simply PTD refers to:

- The means communities **select, propagate and manage** high-value indigenous fruit trees and medicinal plants and integrate them in the various farming systems,
- Species for domestication are mainly selected encompassing **indigenous knowledge and genetic selection based on scientific principles**
- A strong partnership is developed with scientists, civic authorities and private companies.
- PTD is a farmer driven and market lead process. It focuses on species **farmers consume best** with high potentials for local, regional and international markets



Tree species domesticated in the West African Sahel

- *Parkia biglobosa* (nééré)
- *Vitellaria paradoxa* (shea butter)
- *Ziziphus mauritiana* (Sahel apple)
- *Adansonia digitata* (baobab)
- *Tamarindus indica* (tamarind)
- *Faidherbia albidia* (gao or cad)





How to multiply the selected species: rooting cuttings



Case studies in the Sahel





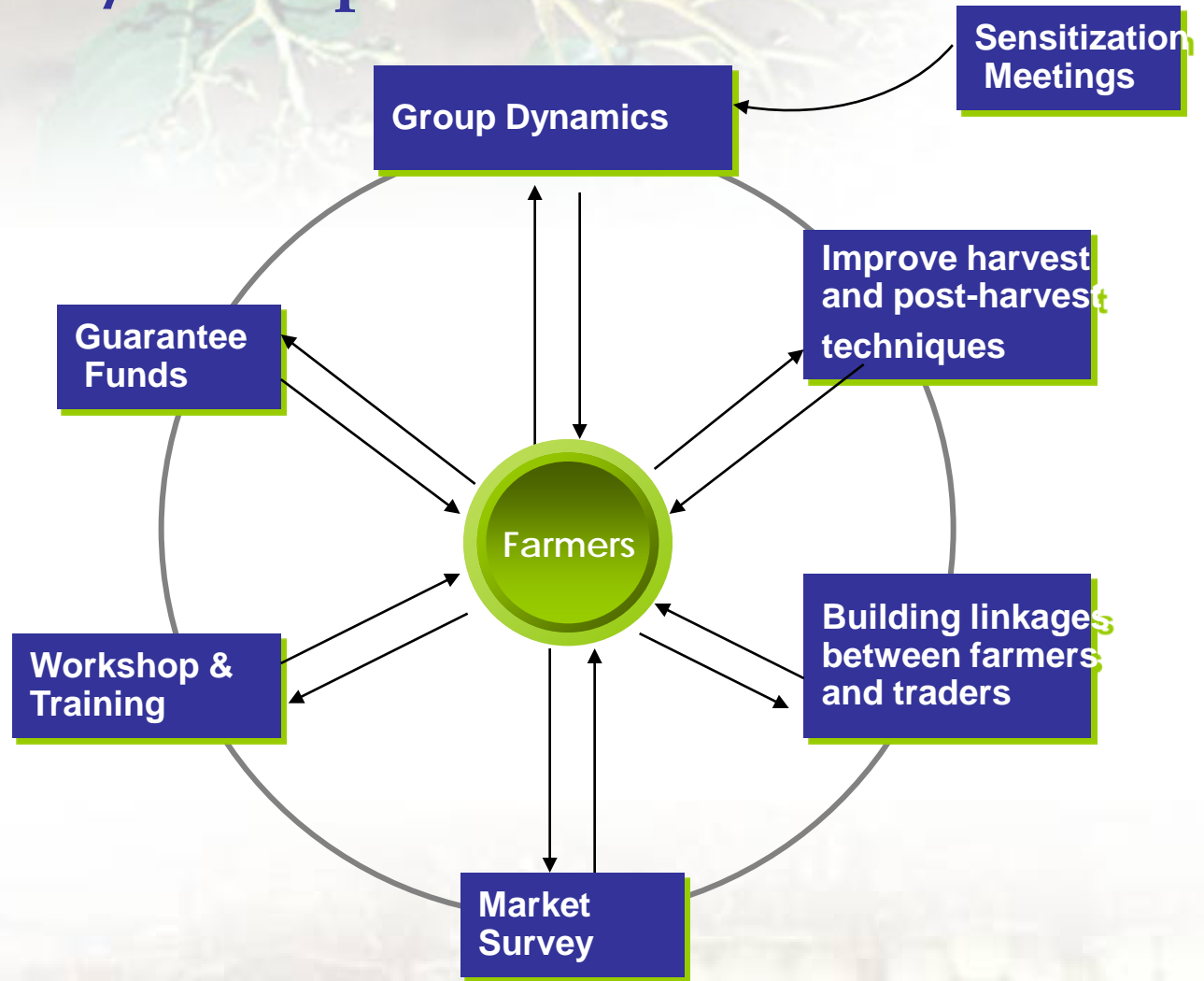
How to multiply the selected species: air layering





Collectives action / Group Sales

Farmer Enterprise Development In Cameroon



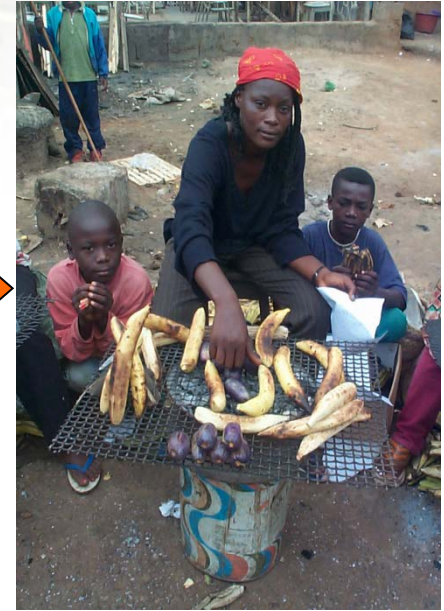
Cycle of Tree domestication



Tree nurseries



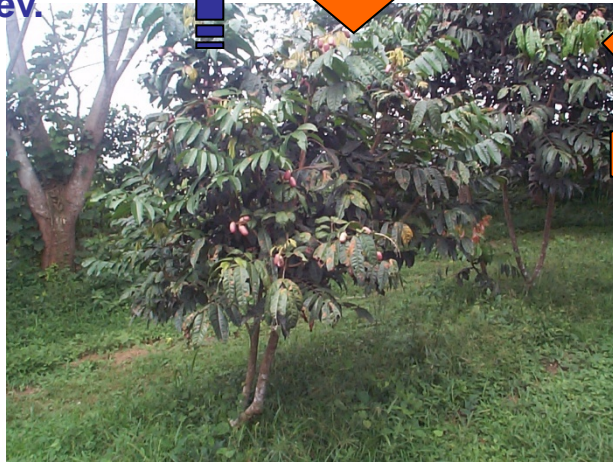
Traders



Processing and Exporting Enterprises



Consumers



Tree producers

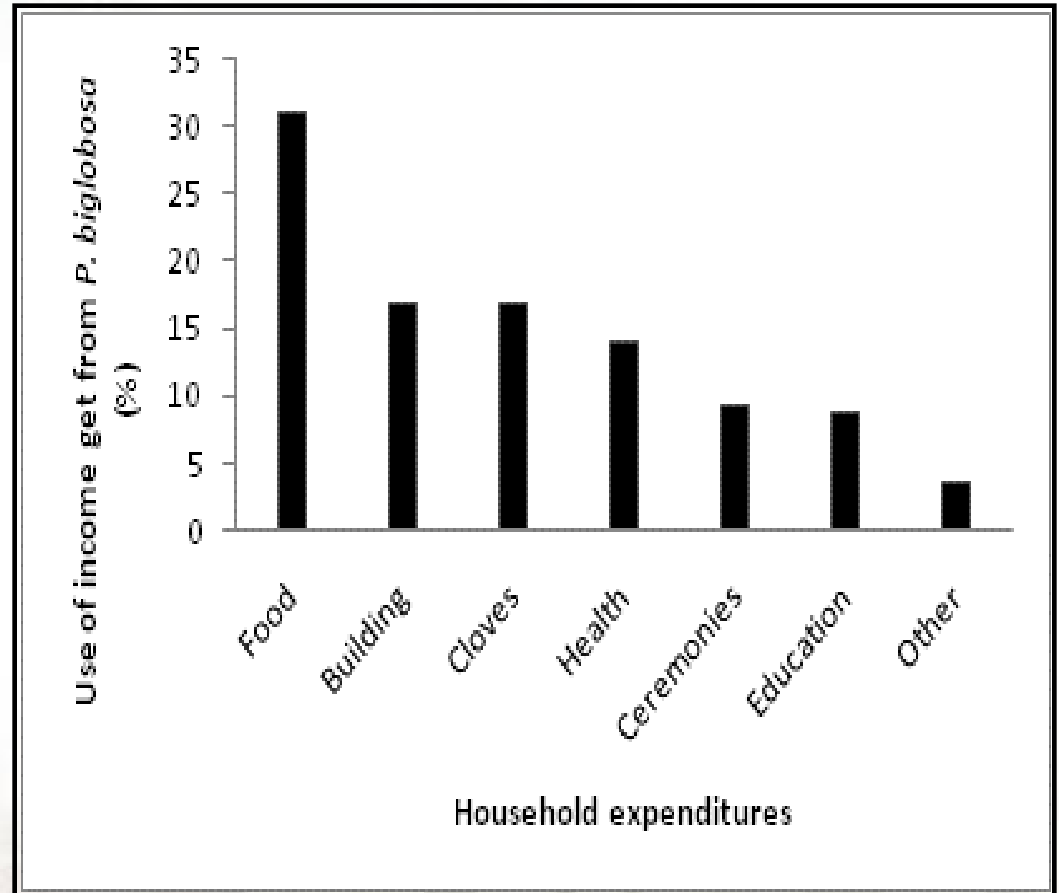
Selection and cultivar dev.

Info on desired fruit characteristics

Consumer preferences

The contribution of the use of *P. biglobosa* to household income

- Each household used a monthly average of 14.4 kg of seeds and 10.6 kg of pulp.
- *P. biglobosa* contributed to **53%** to family net income throughout the production period



Summary

- Participatory Tree Domestication help farmers to acquire vegetative propagation techniques therefore plant early fruiting materials of known characteristics
- It helps to circumvent the lack of sound seeds for any regeneration thus the participation of farmers to Green Great Wall by planting high-value indigenous fruit trees and medicinal plants.
- Marketing of agroforestry products helps to improve livelihood of local population. But we need to plant the right tree at the right place.



The right tree for the right place

1. Trees for Products



fruit



firewood



medicine



income



sawnwood



fodder

2. Trees for Services



**soil
fertility**



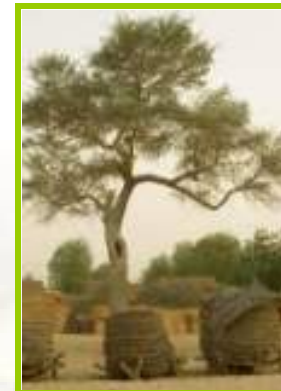
**carbon
sequestration**



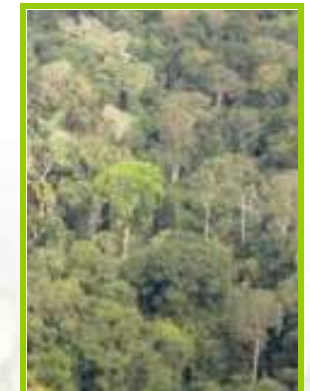
**soil
erosion**



**watershed
protection**



shade



biodiversity



***MANY THANKS FOR YOUR
ATTENTION***

