



Recent developments in cassava processing, utilization and marketing in East and Southern Africa and lessons learned.

Adebayo B. Abass
FAO Expert Consultation Meeting
NRI-UK, December 2008

Cassava

Introduction

- second most important food crop after rice, maize or banana in most countries of ESA

Traditional Cassava Processing and Utilization

- Differ by community and by country

Both the roots and the leaves

- Most marketed processed cassava:

Dried cassava (chips) & flour

Rale/gari (Mozambique)



Traditional Unit operations

- home-based, using kitchen tools
 - peeling,
 - cutting roots to chunk/chipping, slicing,
 - soaking in water (e.g. Zambia) or heap fermentation (e.g. Tanzania),
 - sun- or smoke-drying,
 - Milling & sieving
- sequencing vary depending on the product



Poor processing techniques

-Soaking of several batches of cassava roots in the same stagnant pool of water,

-Sun-drying on bare floors (on-farm, road side),



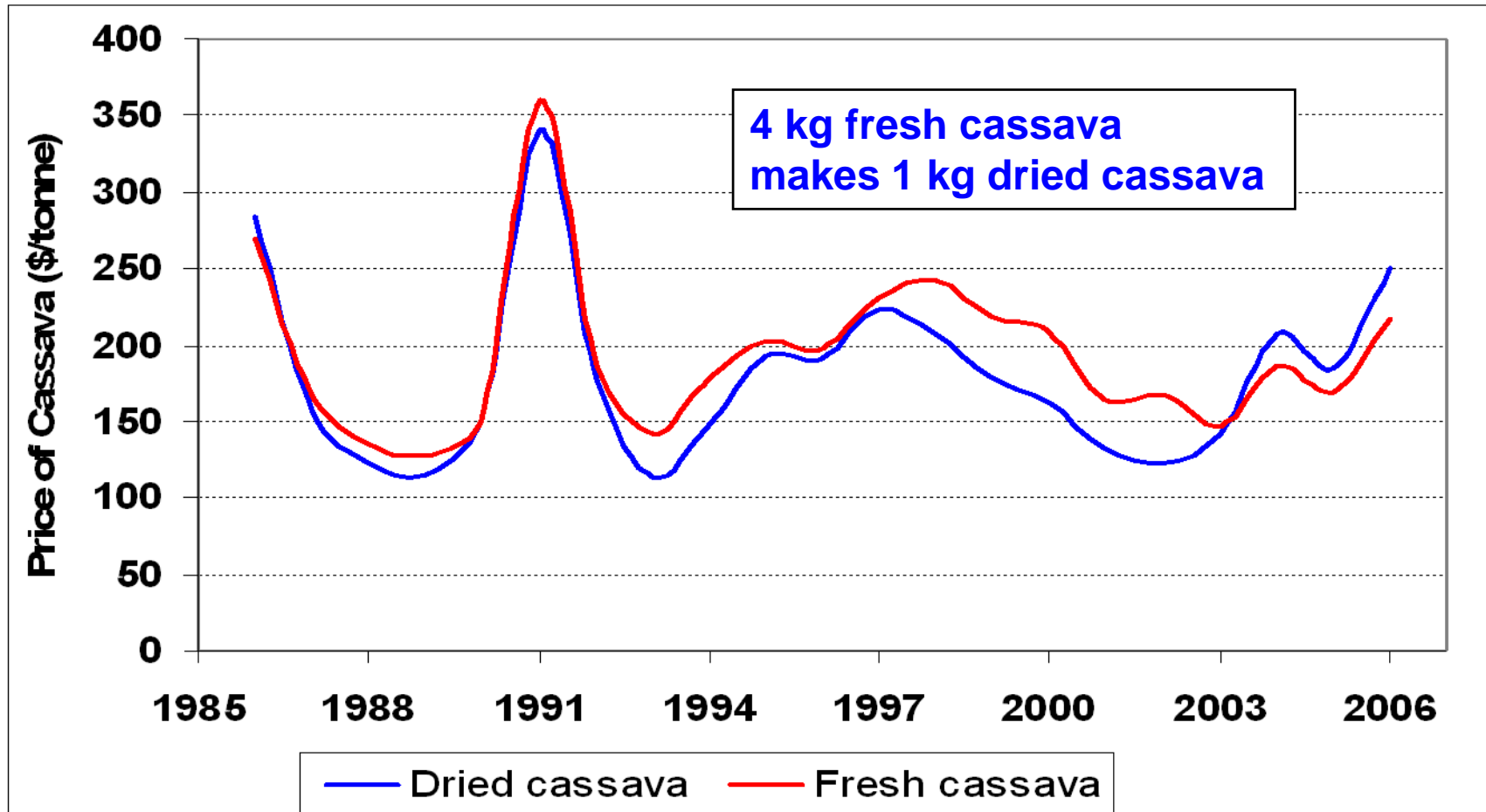


- skipping of washing after peeling,
- non-fermentation,

Are challenges to utilization and commercialization

- Lead to low quality human foods and possibly unsafe
- attract low market prices

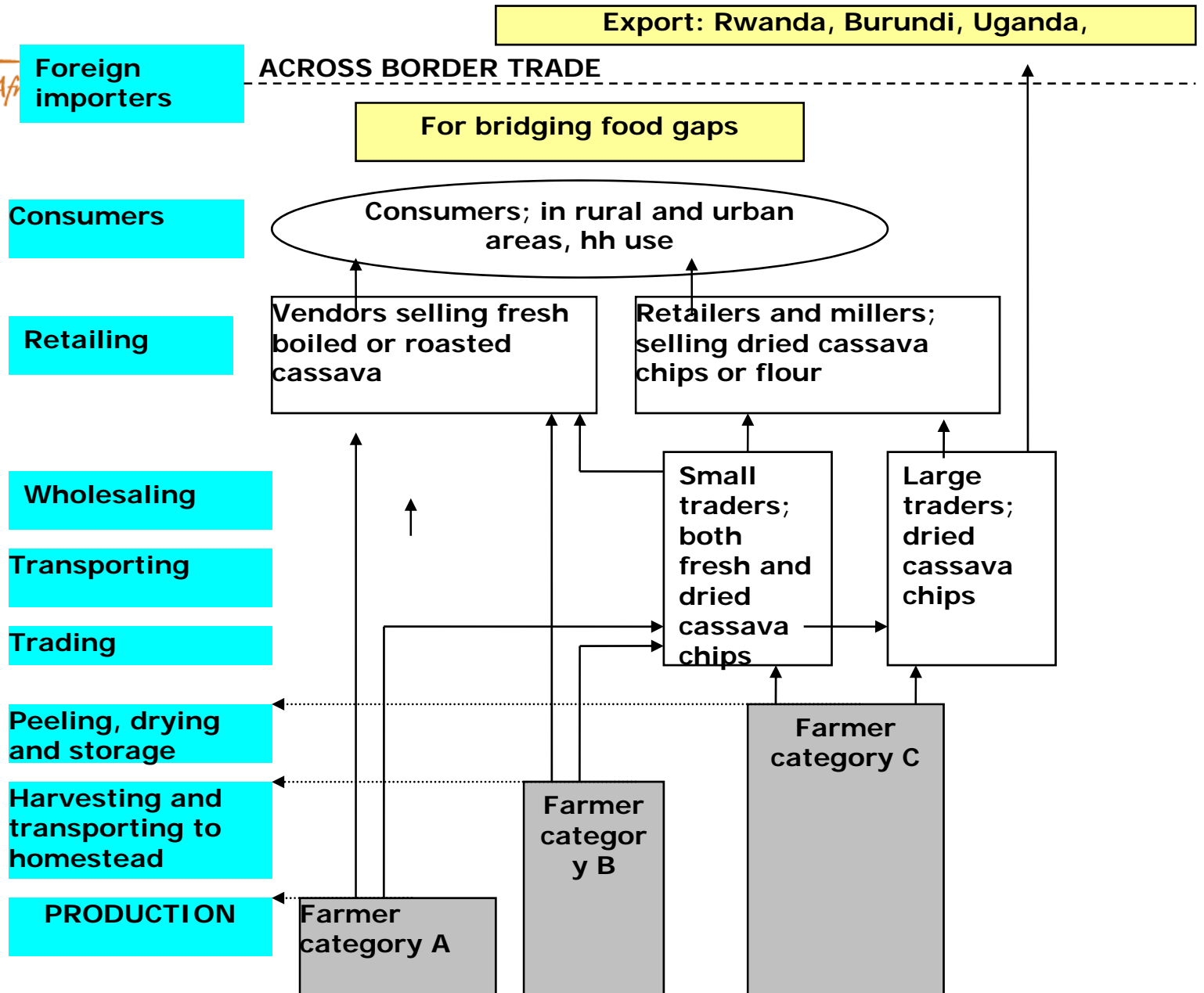
Traditional cassava chips are priced low,





Forms of processed products most traded

Kenya, Malawi, Rwanda & Zambia	Dried chips & flour
Madagascar,	Chips for Feed pancake, baked/ fried cassava
DRC	Chikwangue & dried chips
Burundi	Ikivunde, Ikiobeke and Inyange
Tanzania	Makopa & kivunde
Mozambique	Rale & chips





Recent Institutional and financial support

- Mostly on production issues
- Little emphasis was on processing & value addition

(1990s)

- Development of postharvest technologies (root storage, improved traditional products)

Research centers (CIAT, IITA, NRI, etc)



- Awareness creation on cassava as industrial crop
 - Technology dissemination,
- Root crops net works (ESARRN, EARRNET/SARRNET),
FOODNET,

Research Institutions

- Delivery of machines to national root crop programs/ ministries/ Food Research institutes in Tanzania, Zimbabwe and Malawi
- Malawi, Zambia and Tanzania acquired machines from Zimbabwe

- Formation of Processors into groups
- Distribution of processing machinery to famers' groups
- Introduction of novel processing techniques
chips, HQCF, Starch





- Techniques for manufacture of biscuits, bread etc from composite flour
- Market outlet identification (working with industries)
- Public awareness on cassava as both food crop and commercial crop/industrial raw material
- Stakeholders' networking





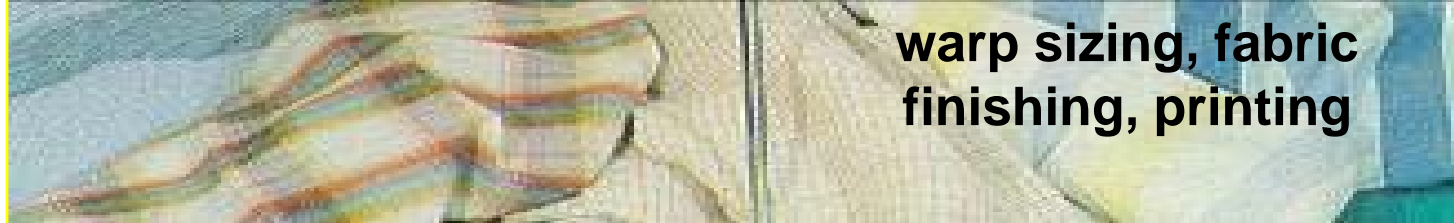
2000/2003

Training of equipment fabricators continued

- Spread of machine designs & the commercial production by private sector partners

- Equipment Fabrication Enterprises Developing: Zimbabwe, Tanzania, Uganda and Zambia





warp sizing, fabric finishing, printing

● Market opportunities

...

Tanzania- Sectors	Quantity MT/Year	Market share %
Pharmaceutical	144	1.4
Brewery	8,000	76.3
Textiles	1,100	10.5
Paper & Paperboard	720	6.9
Adhesives	220	2.1
Processed Foods	300	2.9
Total:	10,484	100

2005 survey

● **Market opportunities ...**

Price
incentive for
processing
cassava to
new industrial
products

Country	Price of wheat flour in baking industry (\$/MT)	Price of HQCF in baking industry (\$/MT)	Price of HQCF in paper industry (\$/MT); replaces corn starch (\$670/MT)
Tanzania	410	330	
Zambia	480		298
Madagascar	670	556	

Data from pilot tests



Research to Nourish Africa

Development of standards (2003-2007)

National Bureaus of Standards, NARS, Universities, IITA

HQCF, Cassava chips, Starch, rale

Madagascar, Tanzania, Zambia (Mozambique? And Uganda?)



Business Planning: Investment indicators

Financial
performance of
pilot processing
sites



Supply

History: Private sector investment in Medium/Large scale processing-ESA

Starch & Chips

1920s-1960s -- Many starch and chips plants -
Madagascar

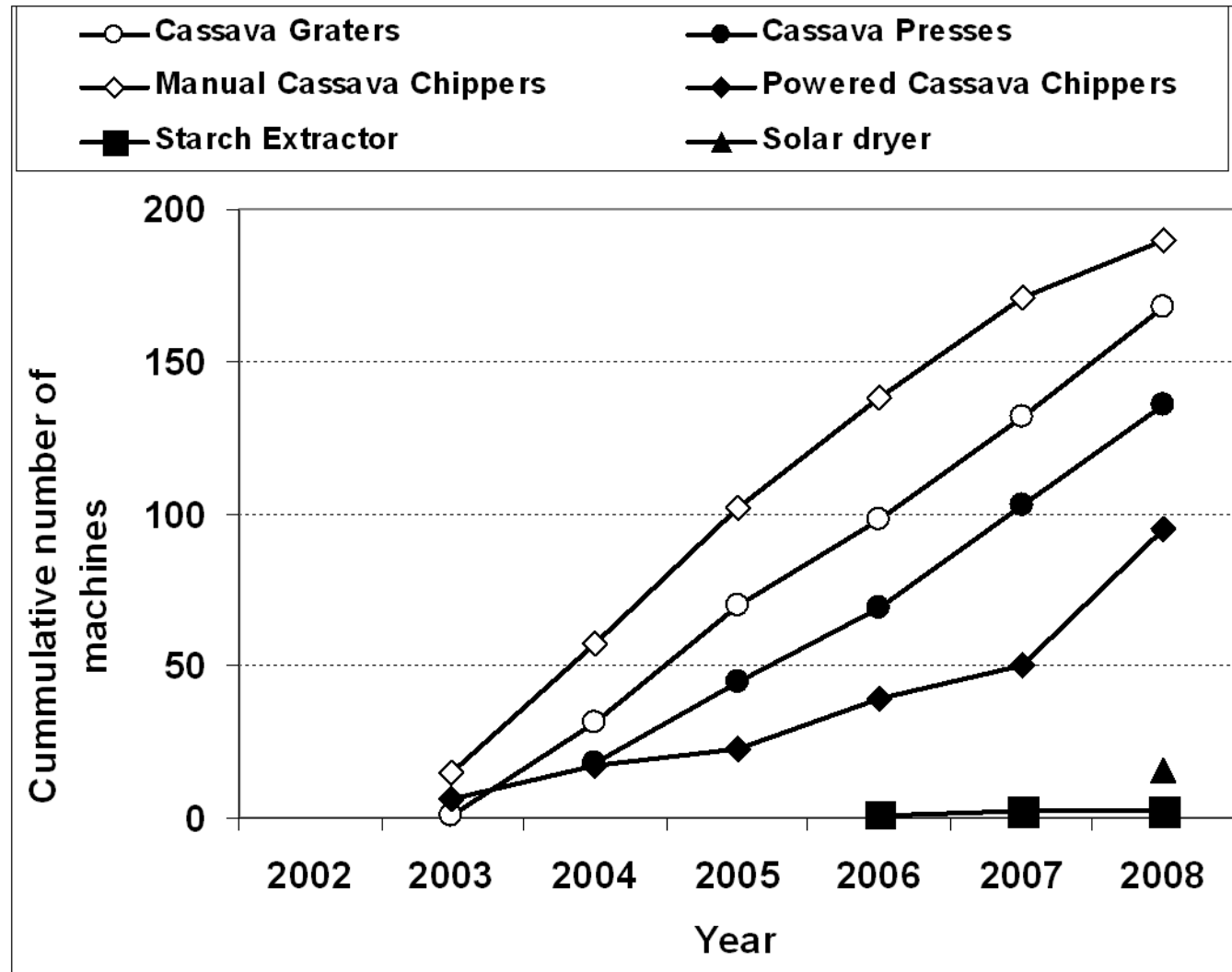
1990s-- Starch plants in Tanzania and Zambia
Closed: lack of raw material

1990-2000s- 2-3 starch plants (Madagascar, SA)

Which Processing Technologies are Spreading ?

Tanzania, Malawi,
Zambia.

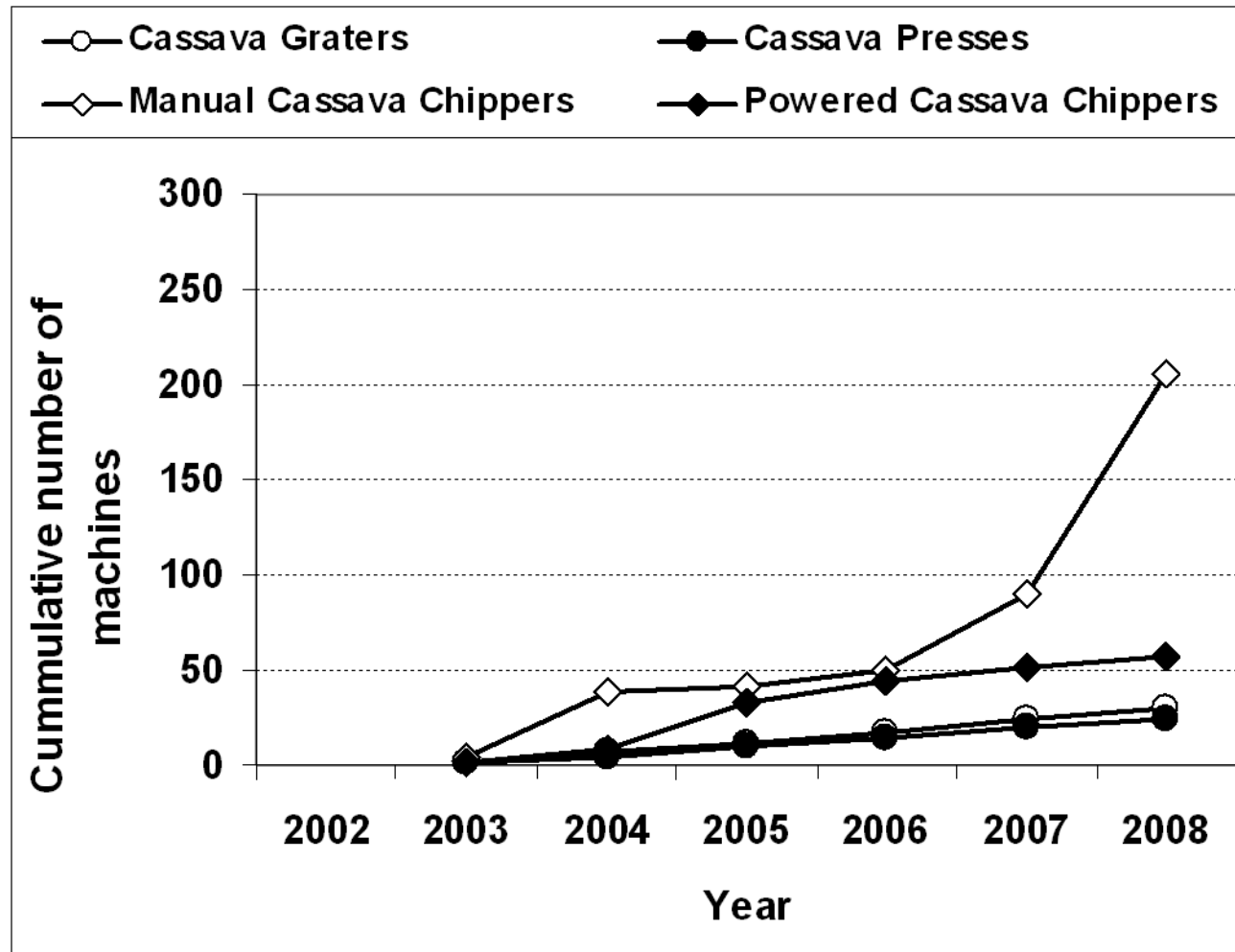
Dominant:
Manual Chipper,
Grater



Which Processing Technologies are Spreading ?

Uganda,
Rwanda,
Burundi

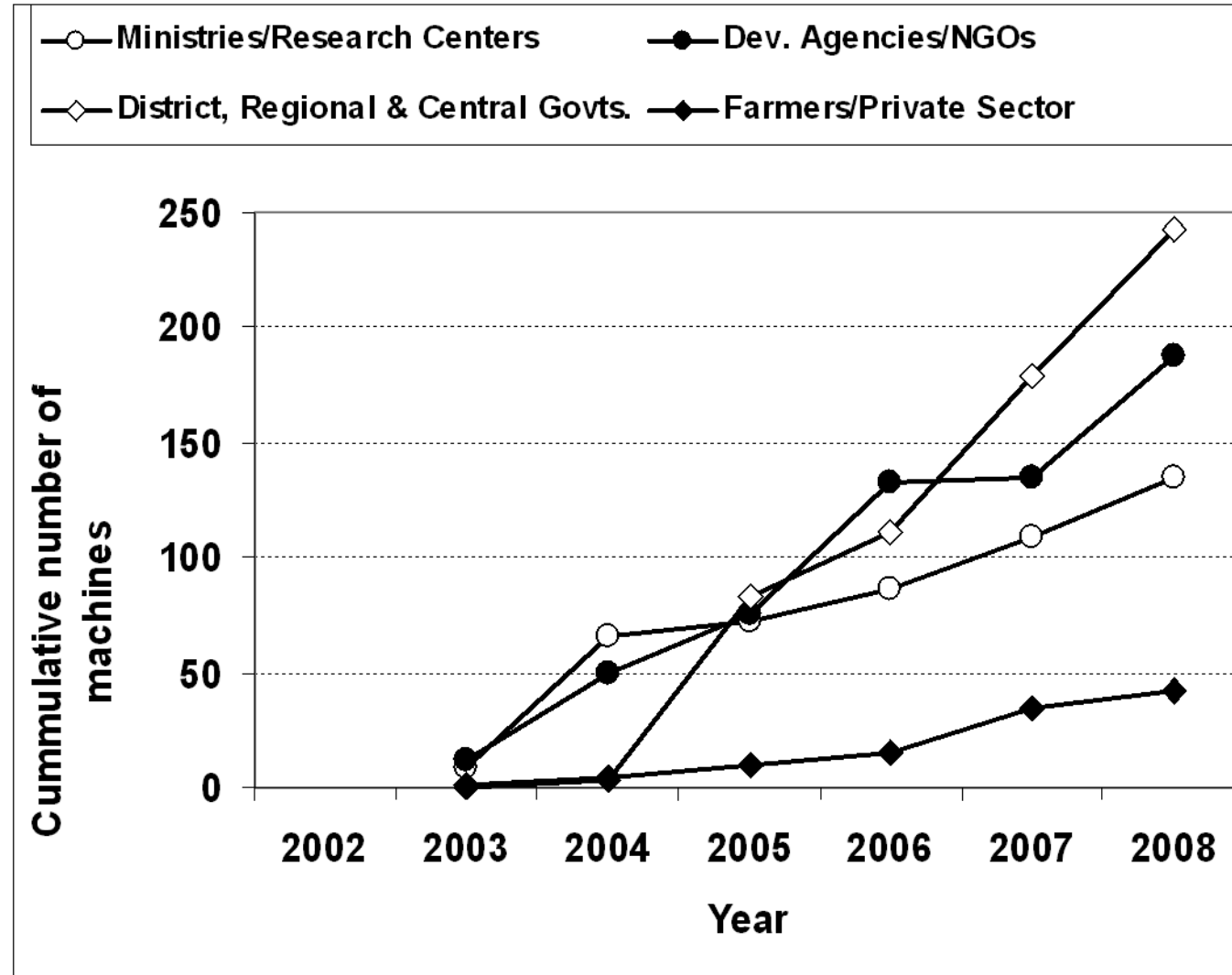
Dominant:
Chippers



Who is investing ?

Tanzania,
Malawi,
Zambia.

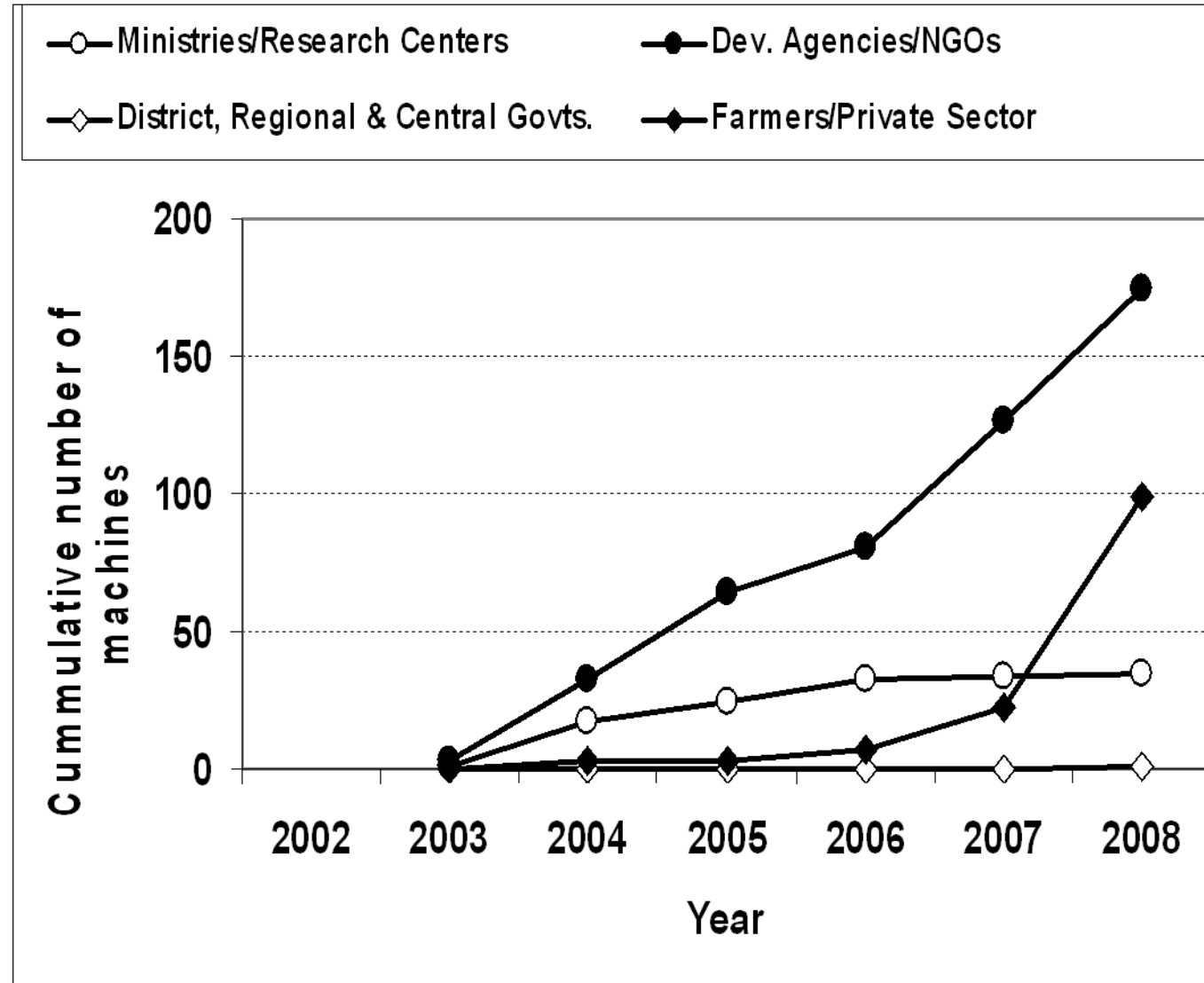
Dominant:
Governments
Dev. Agencies/
NGOs



Who is investing ?

Uganda,
 Rwanda,
 Burundi

Dominant:
 Dev. Agencies/
 NGOs



- - Biofuel: FAO investigating
Export trading Company Ltd. Tz.
 - Starch: MeTL & Rufiji Farm Estate Ltd., Tz.
 - Glucose syrup: Starcas Ltd. - Uganda

Major challenges of transiting cassava into an industrial commodity

- Small-scale processing technologies (sun-drying)

Difficult to meet the quantity, quality, continuity of supply and safety standards

Low supply of cassava roots for processing

Infrastructure: water, road, transport.

Constraints in equipment manufacture: Dryers, chipping discs, engines and plates for eqmt. construction

Major challenges of transiting cassava into an industrial commodity

- Lack of expertise on equipment maintenance
- Machine investment: beyond the reach of small processors
- Poor credit facilities and high interest rates
- Cassava Image (not nutritious, a poor man's food, potentially poisonous)

Farmers'

Groups

Lack of transparency

Limited entrepreneurship skills

Major challenges of transiting cassava into an industrial commodity

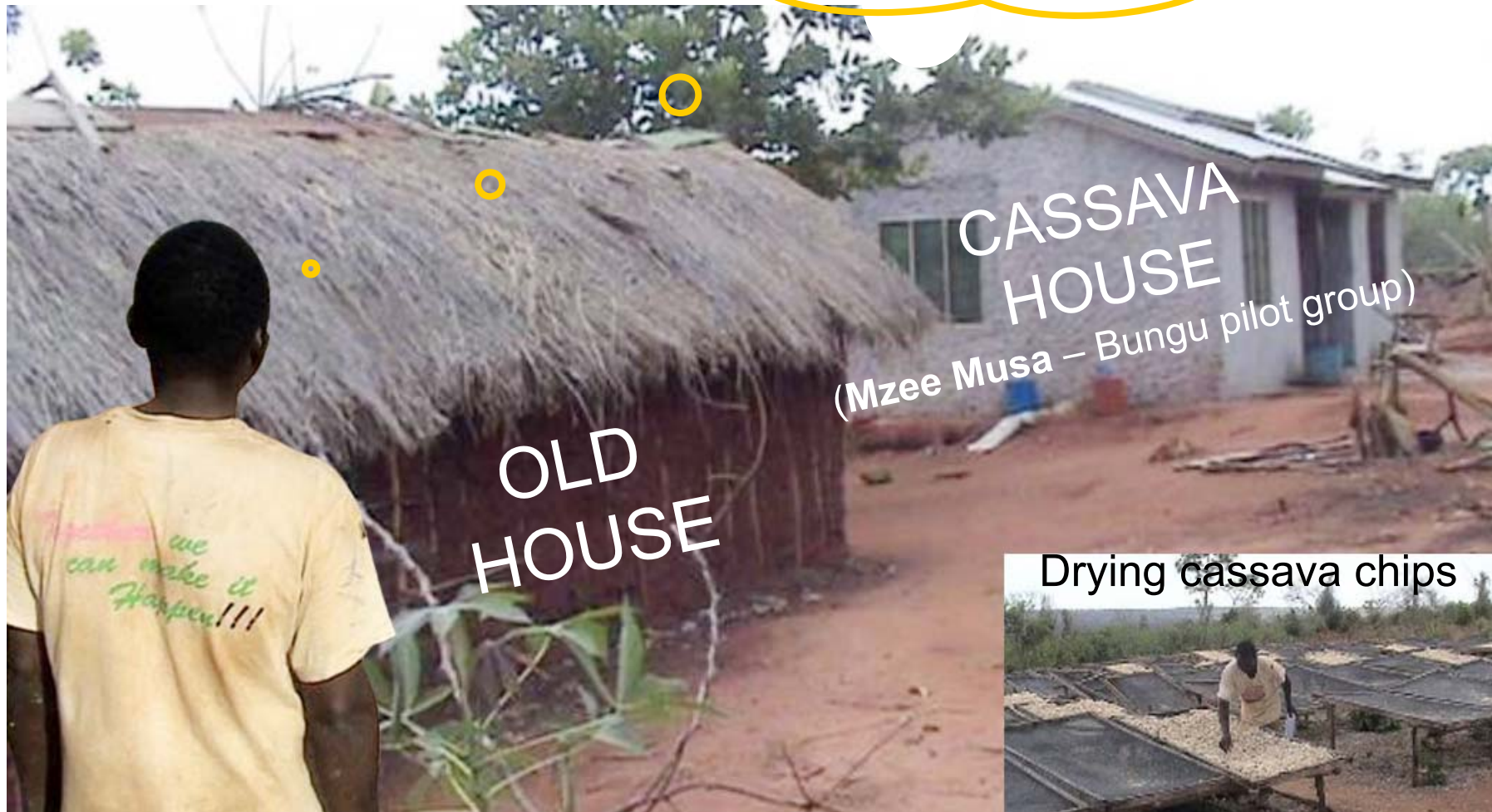
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Institutional approaches that integrate market opportunities and processing technologies with efficient or competitive production practices need to be further developed

Many characteristics of production and supply systems affect the efficiency of processing

Responsible for the private sector phobia?

**Together we can
make it Happen !!!**



THANK YOU