

# Underappreciated Facts about African Agriculture:

## Implications for Poverty Reduction and Agricultural Growth Strategies



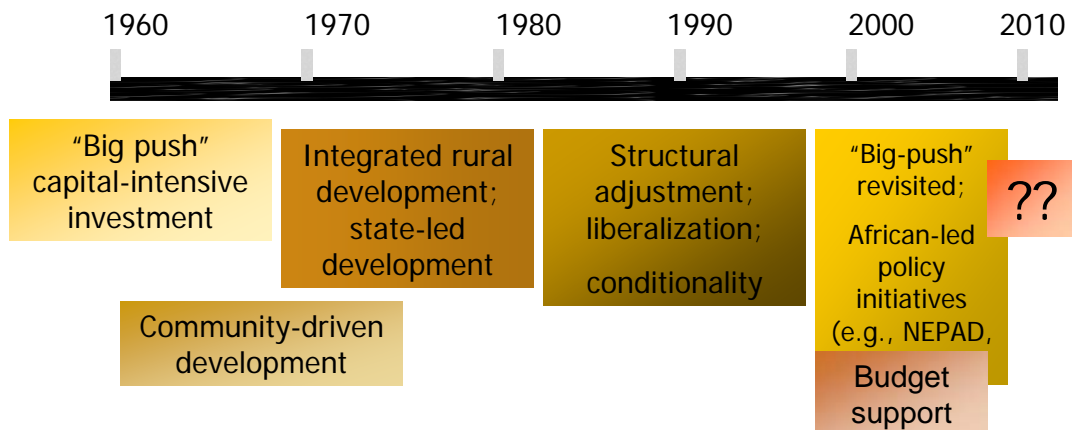
T.S Jayne

with colleagues at Michigan State University

Seminar at African Studies Center, Michigan State University

September 13, 2007

## Major development strategies in retrospect, 1960-2000



# Current thinking on “strategy”

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- Emerging coalition for “big push” agricultural strategy
  - e.g., Sachs, Sanchez,...maybe Gates?
- Strong consensus about need for greater investment in public goods (infrastructure, crop science) and certain policy reforms
- Major debate with regard to what constitutes the right “enabling environment”
  - Food price support/stabilization
  - Input subsidies

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- Many of these debates can be informed by a solid empirical understanding of how rural economies work

## Organization of presentation:

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1. Underappreciated “empirical regularities” of small farm agriculture in Africa
2. Discuss the implications of these findings for current policy debates

## Six underappreciated aspects about African agriculture:

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1. Farm sizes are declining → Huge land disparities → rural population is hardly growing → new demands on food marketing systems
2. Given plausible assumptions about productivity growth possibilities, grain productivity growth will be inadequate to kick-start growth in most of the region → diversification into higher-return activities will be crucial
3. Most farmers in the region are buyers of staple food → directly hurt by higher grain prices
4. Retail food prices are trending downward in most of the region

## Six underappreciated aspects about African agriculture:

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5. Supermarkets account for less than 4% of urban food expenditures in almost all African countries. Even with major growth in supermarket volume, investments in traditional marketing channels will remain much more important for small farmer and consumer welfare
6. “Market liberalization” -- inaccurate description of situation in E&S Africa

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## Fact #1

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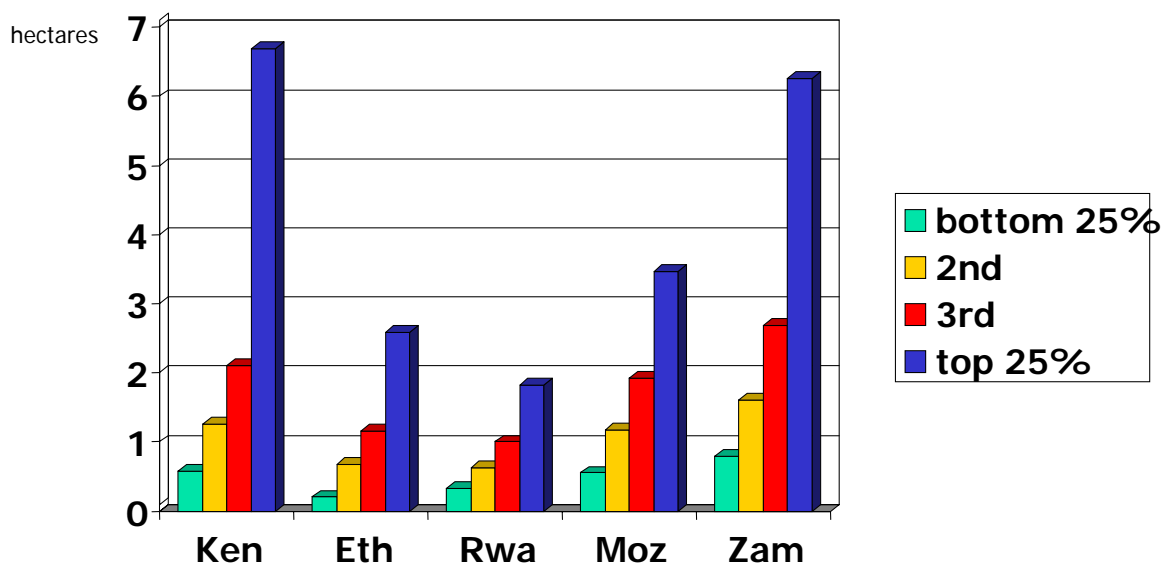
- Emerging land pressures are generating fundamental challenges for poverty reduction and investment strategies

## Cultivated land per agricultural person (hectares)

	1960-69	1970-79	1980-89	1990-99
<b>Ethiopia</b>	0.508	0.450	0.363	0.252
<b>Kenya</b>	0.459	0.350	0.280	0.229
<b>Mozambique</b>	0.389	0.367	0.298	0.249
<b>Rwanda</b>	0.215	0.211	0.197	0.161
<b>Zambia</b>	1.367	1.073	0.896	0.779
<b>Zimbabwe</b>	0.726	0.664	0.583	0.525

Source: FAOStat website: Source: FAO Stat database: [www.faostat.fao.org/](http://www.faostat.fao.org/)

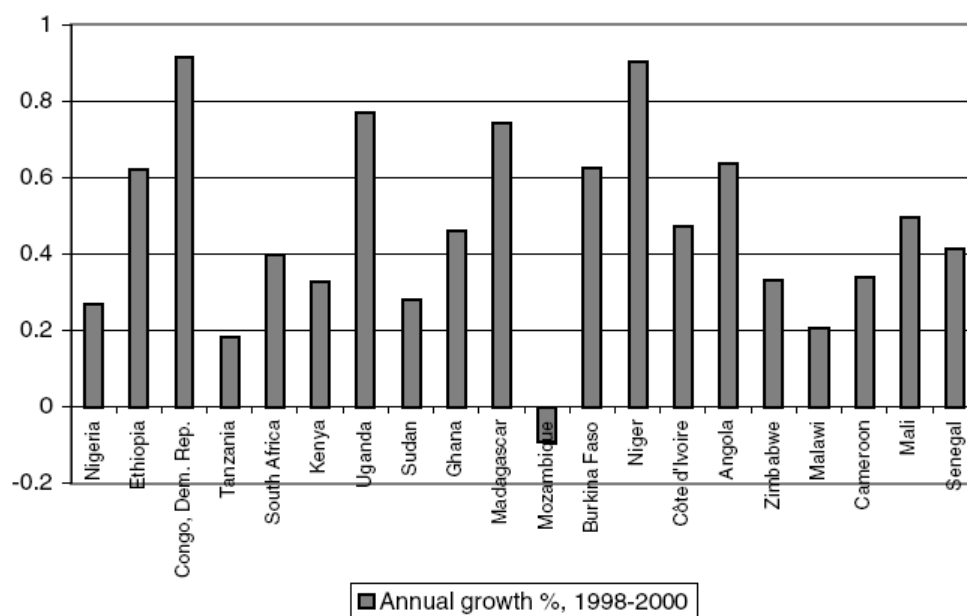
## Farm size distribution: Small farm sector



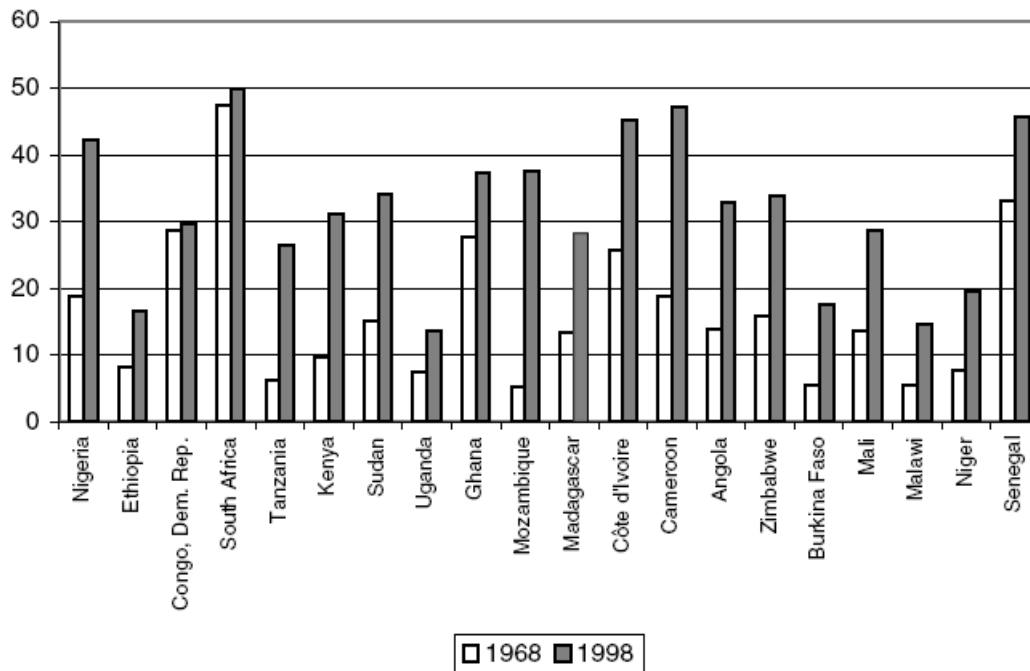
## Characteristics of smallholder farmers, Zambia 1999/00

	N=	Farm size (ha)	Asset values (US\$)	Gr. Rev., maize sales (US\$)	Gr. Rev., crop sales (US\$)	Total hh income (US\$)
Top 50% of maize sales	23,680 (2%)	6.0	1,558	690	823	2,282
Rest of maize sellers	234,988 (23%)	3.9	541	74	135	514
Households not selling maize	762,566 (75%)	2.8	373	0	61	257

## Rural population growth rates



## Share of Urban population in total population, 1968 and 1998



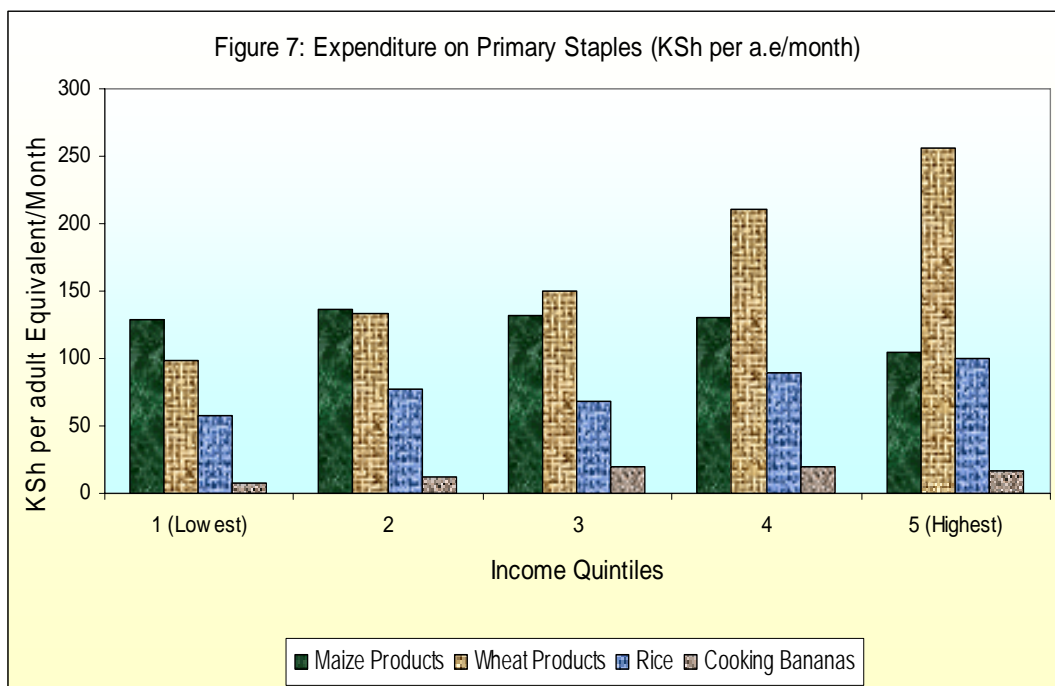
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- More than 50% of Africa's population will be urban by 2015.
    - 2000: 10 farm households feed 7 non-farm households
    - 2020: 10 farm households feed 16 non-farm households
  - Upshot: urban demand for food is rising rapidly

## Are imported wheat and rice crowding out domestically-produced grain?

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- 3.6% annual growth in cereal imports
- Of total grain imports by African countries, only 5% is produced by African farmers
- Growth in urban demand is being met mainly by imported rice and wheat

## Importance of Imported Staples in Nairobi Expenditure Patterns



## Fact #2

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- Given plausible assumptions about new technology development, farm sizes are too small for grain-based productivity growth to lift most rural households out of poverty
- Hence, diversification into higher-return activities will be crucial
- This transition is already occurring

Role of maize in farm sales revenue is declining (share of gross sales revenue)

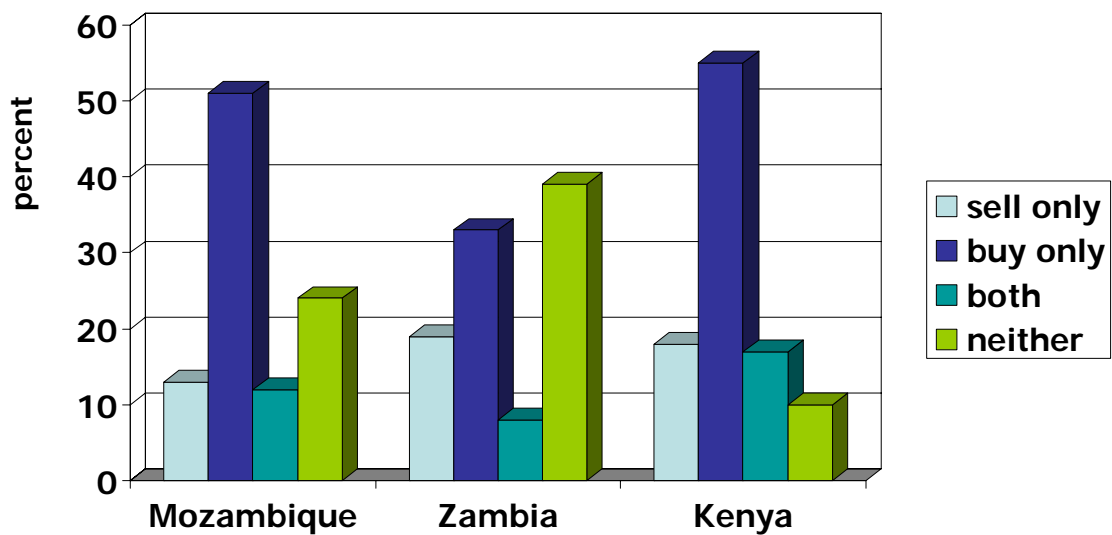
	Maize	Other grains/ beans/ oilseeds	Non-food cash crops	Fruits - veges	Animal products
Kenya	13.3	7.9	34.0	14.7	26.7
Malawi	32.3	11.8	44.9	na	na
Mozam	13.8	9.3	16.9	30.4	23.4
Zambia	28.2	7.7	16.7	27.5	14.7

## Fact #3

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- Most rural farm households are buyers of maize (or net buyers)

### Smallholder Households' Position in the Maize Market



## Fact #3

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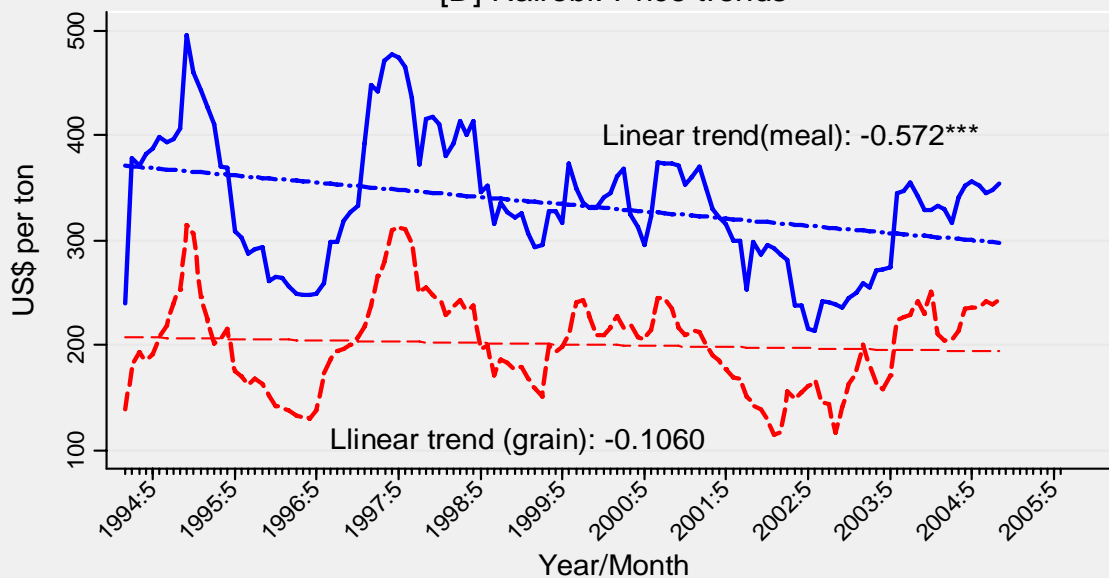
- Most rural farm households are buyers of maize (or net buyers)
- 2% of households account for 50% of marketed grain surplus
- Crop price supports:
  - highly concentrated benefits
  - anti-poor
  - Most likely impede small farm diversification into higher-valued activities

## Fact #4

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- Retail maize meal prices are trending downward

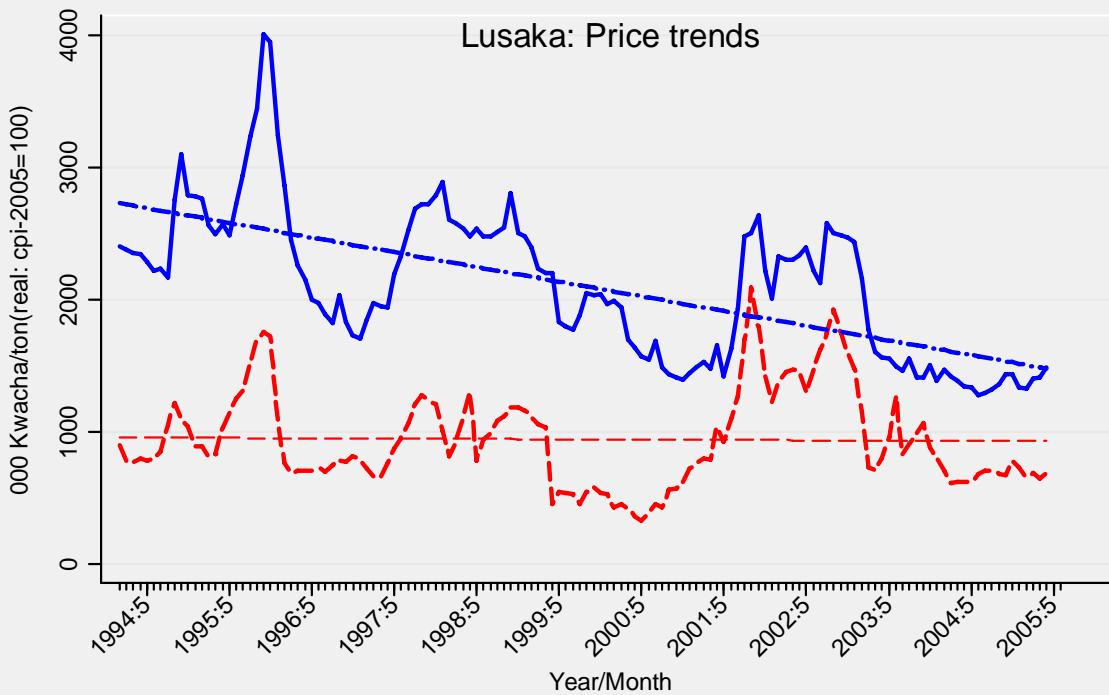
[D] Nairobi: Price trends



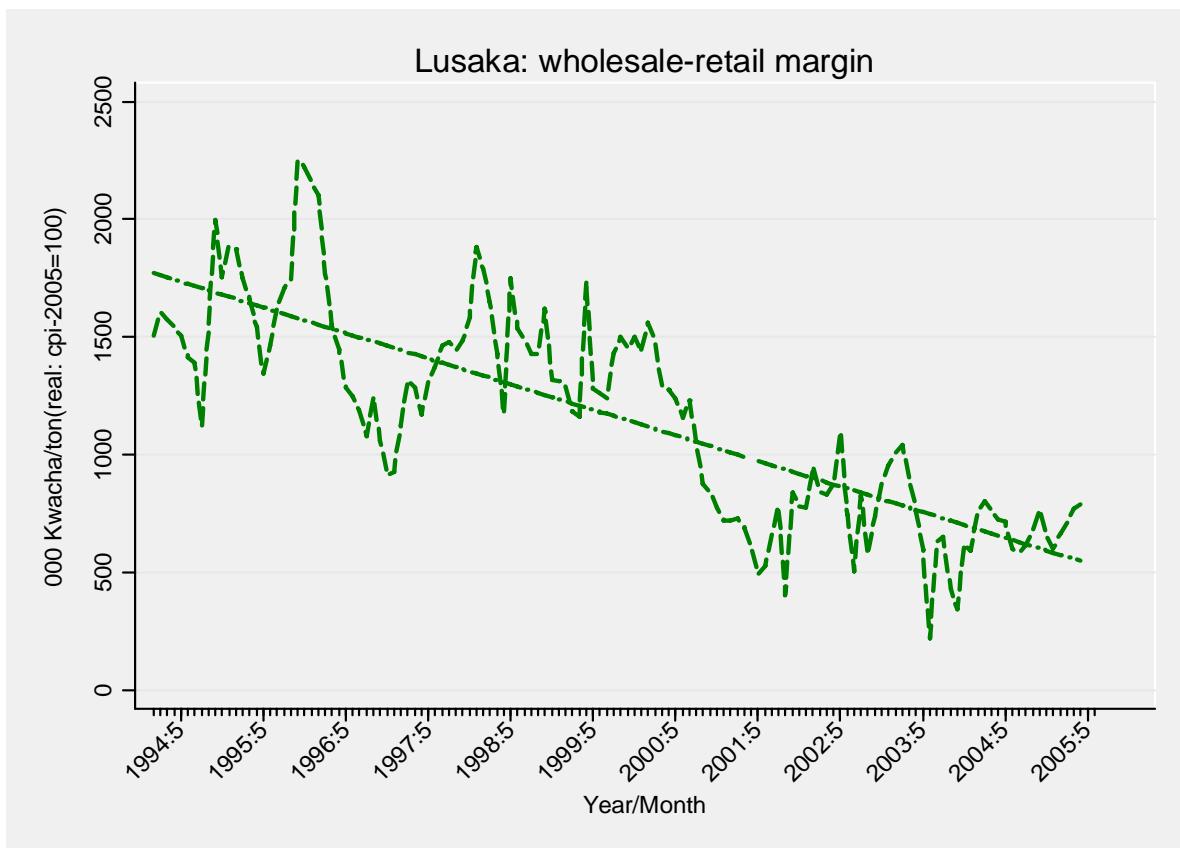
--- Wholesale maize grain      — Retail maize meal  
-.- Linear-trend-grain      -.- Linear-trend-meal

\*\*\* 1% level of significance

Lusaka: Price trends



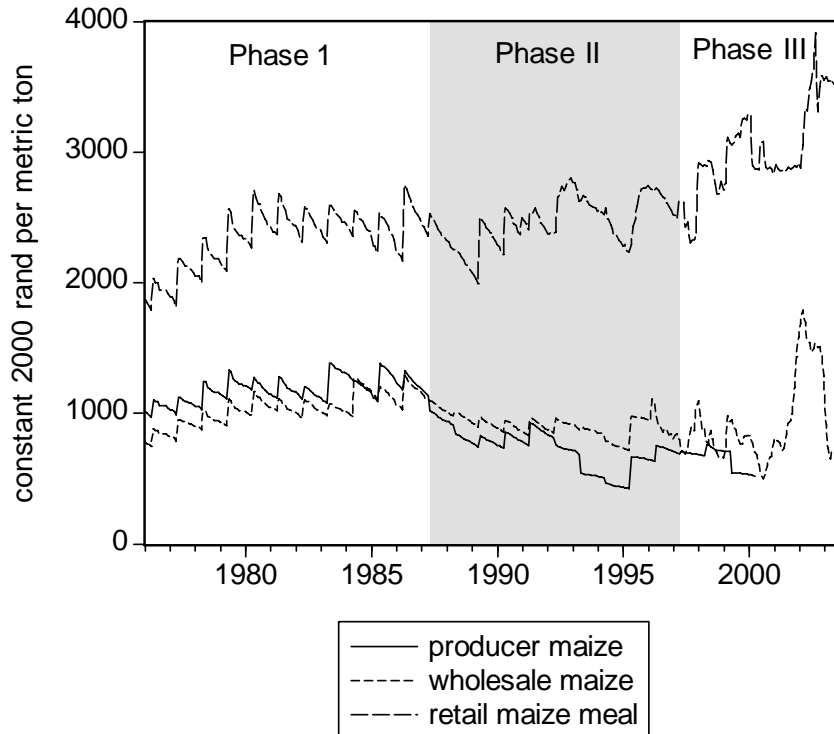
--- Wholesale grain      — Breakfast meal  
-.- Linear-trend-grain      -.- Linear-trend-meal



## Fact #4

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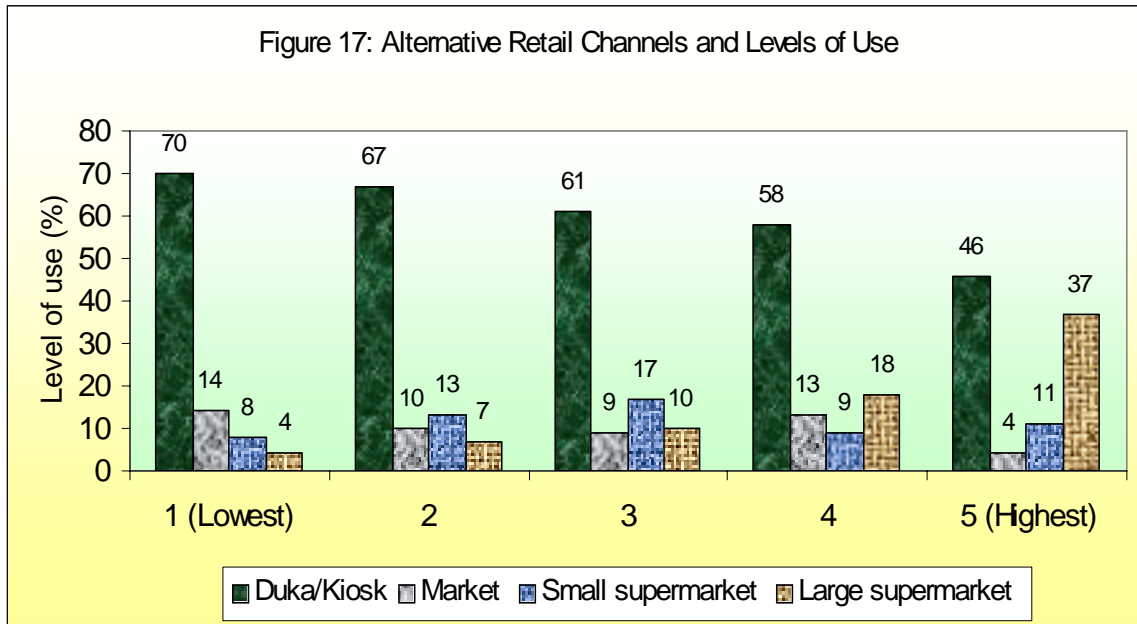
- Retail maize meal prices are trending downward
- Why?
  - Food market reform has encouraged rapid investment in informal, small-scale milling and trading networks
  - The informal channel exerts competitive pressure on commercial millers/retailers
  - Exception: South Africa



## Fact #5

- The performance of “traditional” food systems will remain a much more important determinant of farmer welfare and consumer food security than global “supermarkets”
- Hence, focus investment priorities on improving the performance of traditional food marketing systems
  - linking traditional with new agribusiness systems

## Retail sources of consumer staple food expenditures, Nairobi, 2003



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- Even with 20% annual growth in supermarket share, in relatively progressive Kenya, in 10 years, the supermarket share will be:

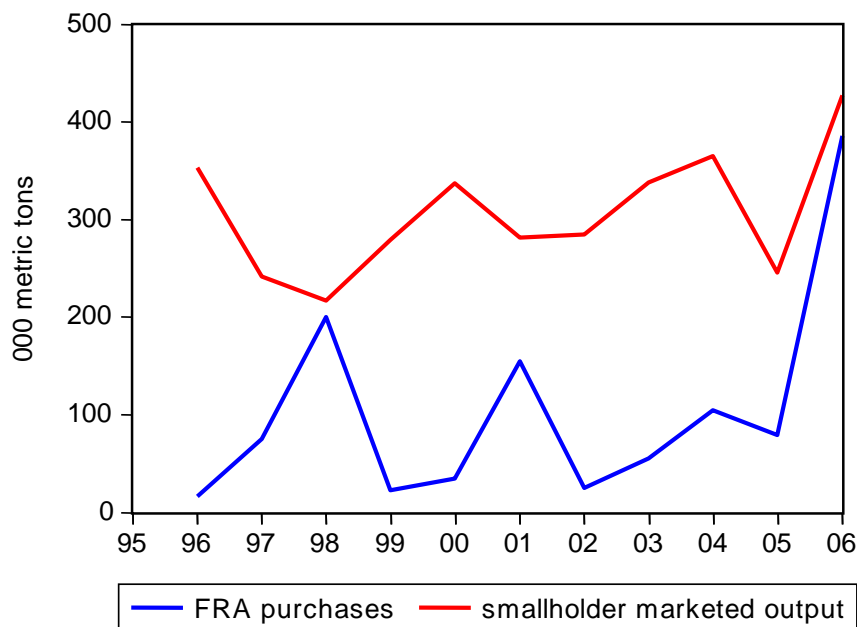
12.4% market share in 2016.

## Fact #6

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- Major misunderstanding of the staple food and input market policy environment
  - “liberalization” – a misnomer
  - marketing boards continue to play major role in food and input markets
    - Handle 25-60% of marketed maize in Zambia, Kenya, Malawi, Zimbabwe
  - policy uncertainty

Food Reserve Agency Maize Purchases and Estimated Sales from Smallholder Sector, Zambia



Source: Jayne, Mather, Mghenyi, 2006

# Sources of Policy Unpredictability

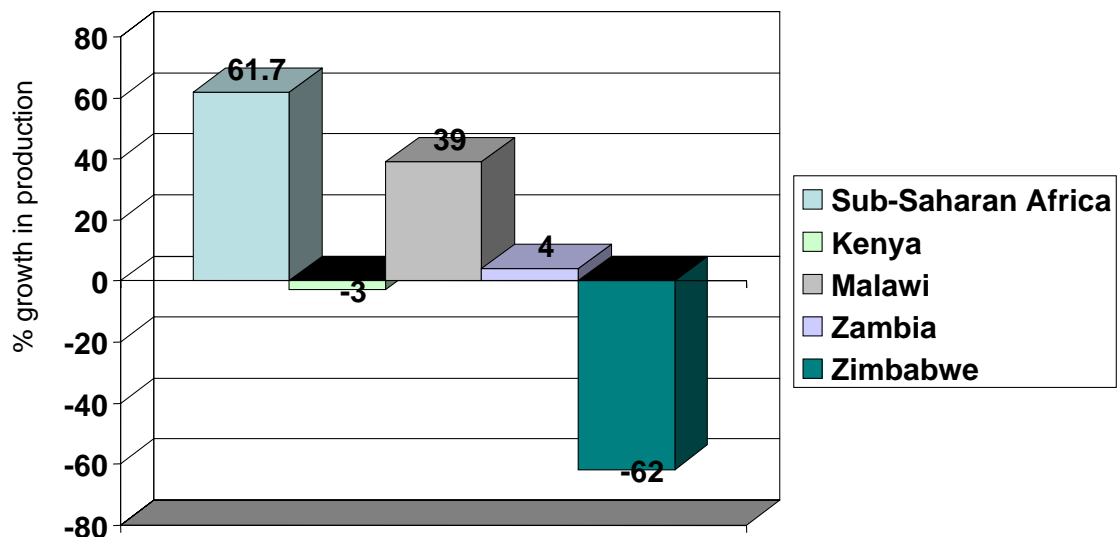
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- Export bans, import quotas
- Uncertainty over changes in import tariff rates
- When and where will marketing boards enter the market, at what price
- Conclusion: Price uncertainty is very high in the “liberalization” era, partially due to the operations of governments

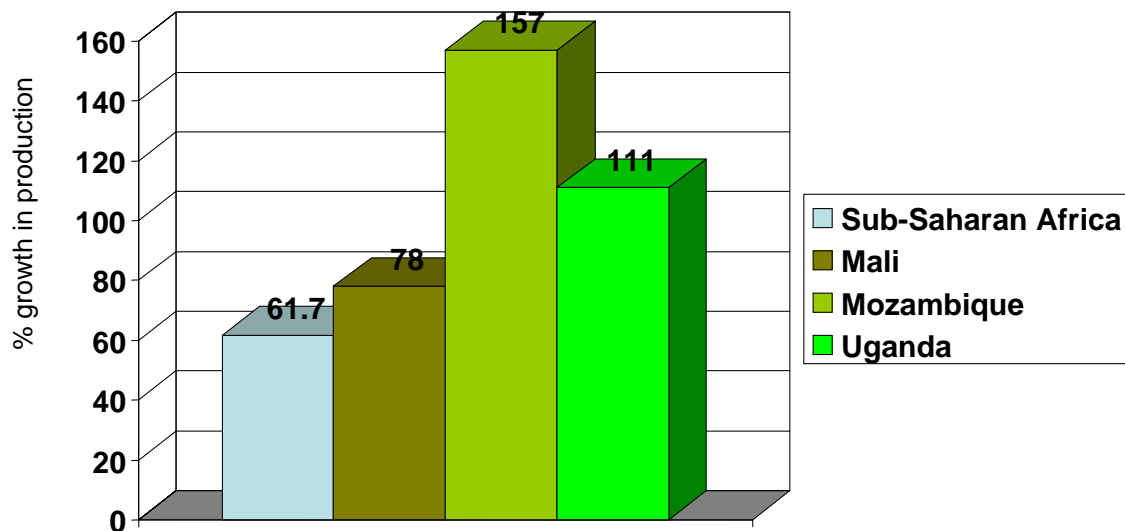


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- Why does it matter how we characterize the market environment over past 15 years?
  - It matters a great deal

## African Countries - % Growth in Cereal Production between 1985 and 2005



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## Where from here?

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- Implications of:
  - > 50% of rural farm households have < 1 hectare and are extremely poor
  - > 50% of rural farm households are net buyers of staple food
  - Massive rural-to-urban migration: massive under-employment
  - but lacking the human capital to contribute productively to society

## Much research evidence documents high returns to investment in

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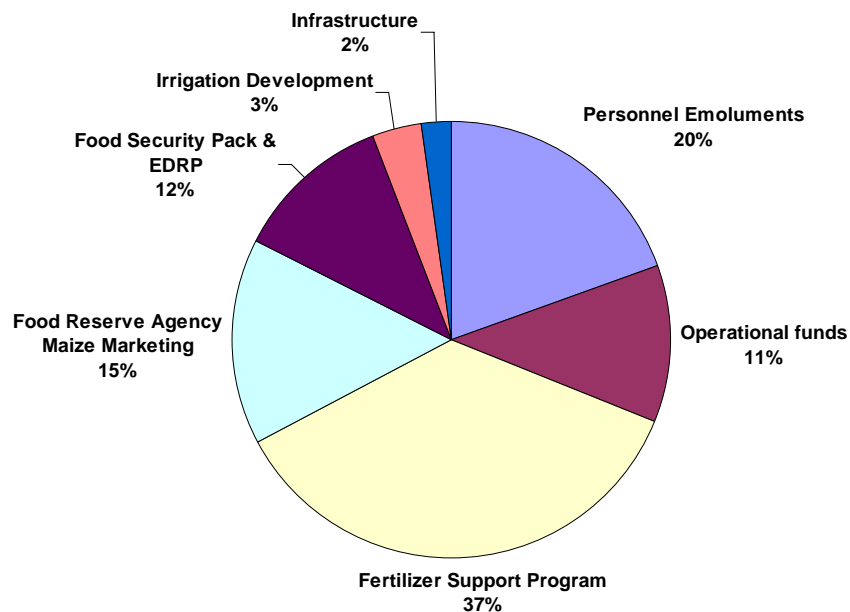
1. R & D: (Alston, Grilliches, Mellor)
2. Education: turns information into knowledge (Johnston)
3. Extension systems: farm management (Evenson)
4. Infrastructure: road, rail, port, communications (Antle)
5. Investments in health and addressing HIV/AIDS (Binswanger)

### IFPRI review of rate of return studies:

	Returns
Subsidies	Negative – 12%
Investments	
- research & extension	35% to 70%
- roads	20% to 30%
- education	15% to 25%
- communications	10% to 15%
- irrigation	10% to 15%

**If we believe these findings, they have major implications**

## Budget allocation to Agricultural Sector in Zambia: ZMK465 million in 2005



Zambia	Total Income	Assets	Landholding size
	‘000 kwacha per capita		ha per capita
<i>Households not acquiring fertilizer:</i>	266	173	.15

Source: Govereh et al, 2006

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<i>Households not acquiring fertilizer:</i>	266	173	.15
<i>Cash purchases from private retailers:</i>	774	342	.20
<i>Government Fertilizer Support Program (50% subsidy)</i>	804	425	.23

Source: Govereh et al, 2006

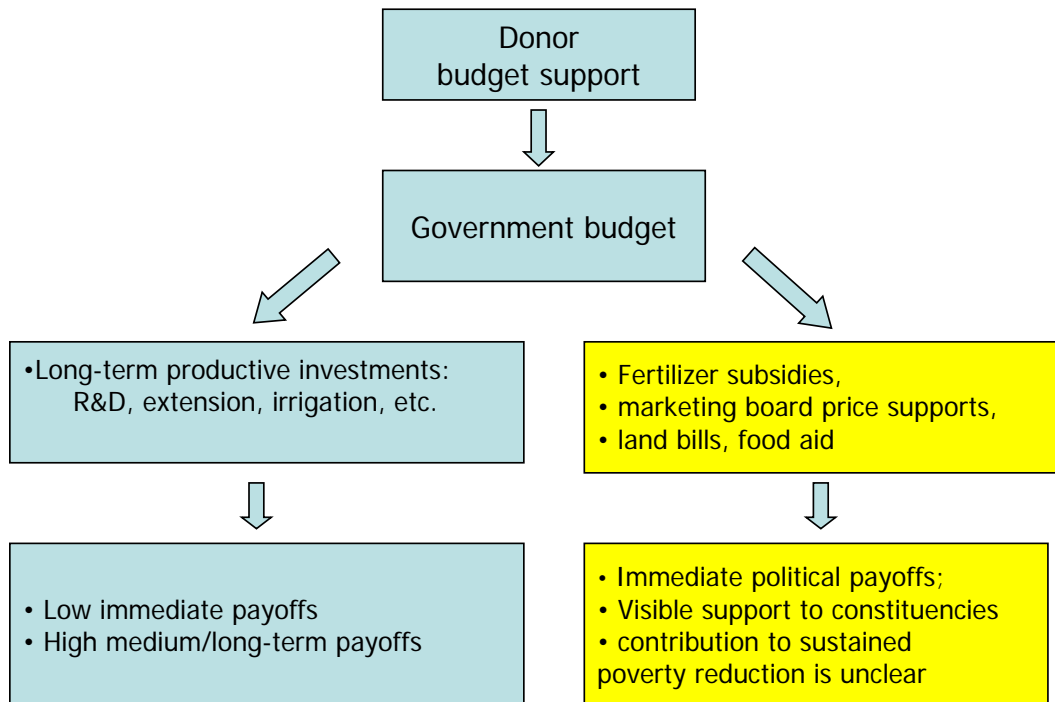
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- As massive as the poverty problems are now, they will be much greater unless budgets are re-allocated sooner or later to investments that will make the economy productive in the long-term:
    - Population growth w/o productivity growth → civil strife
    - Not a viable option to have more and more “fragile” or “failed” states

## Major Challenge:

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- how to provide incentives for states to reallocate public budgets toward crucial investments with long-term payoffs instead of programs with short-term payoffs with limited impact on L.T. development?
- Future of ‘untied’ budget support?

## Political economy of public resource allocation



## Policy response (cont.)

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- Lobby forcefully for more level playing field in international trade
  - OECD support for Africa: \$50 bill./yr
  - OECD ag. subsidies: \$350 bill./yr

## Policy Implications – going out on a limb

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1. Incentives for government to reallocate expenditure patterns toward those that reduce costs in the system
2. Greater, but more selective, donor support for growth-promoting investments – move away from budget support
3. Policy stability and predictability
4. Food self-reliance, not food self-sufficiency
5. Implicit in all the above are thorny political economy issues that must be addressed



thank you