

Market Development and Agricultural Growth: A Review of Approaches and Survey Evidence



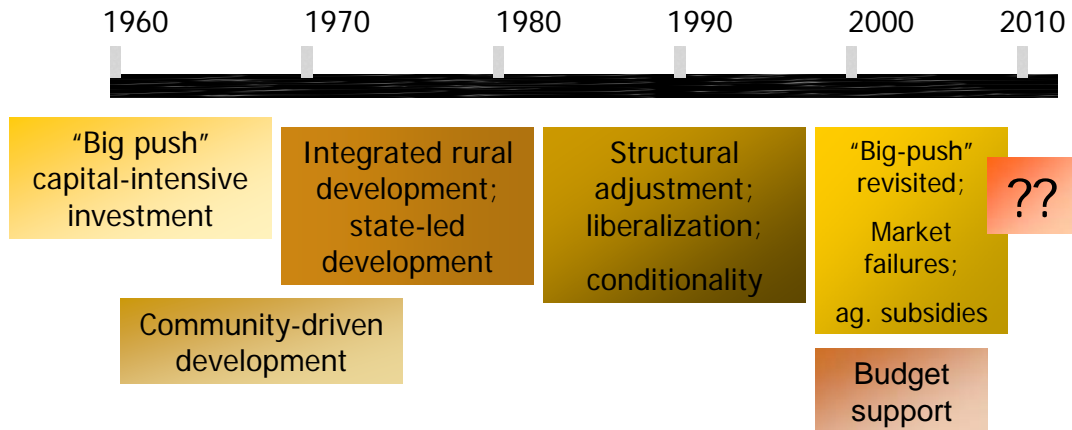
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TCI Seminar
FAO Headquarters
July 17, 2007

True or False:

1. Less than 40% of smallholder farmers sell staple grain
2. More than 50% of smallholder farmers cultivate less than 1 hectare.
3. Fertilizer use by smallholder farmers is higher than it was in 1990.
4. Is a smallholder-led agricultural strategy appropriate and feasible?

Major development strategies in retrospect, 1960-2000

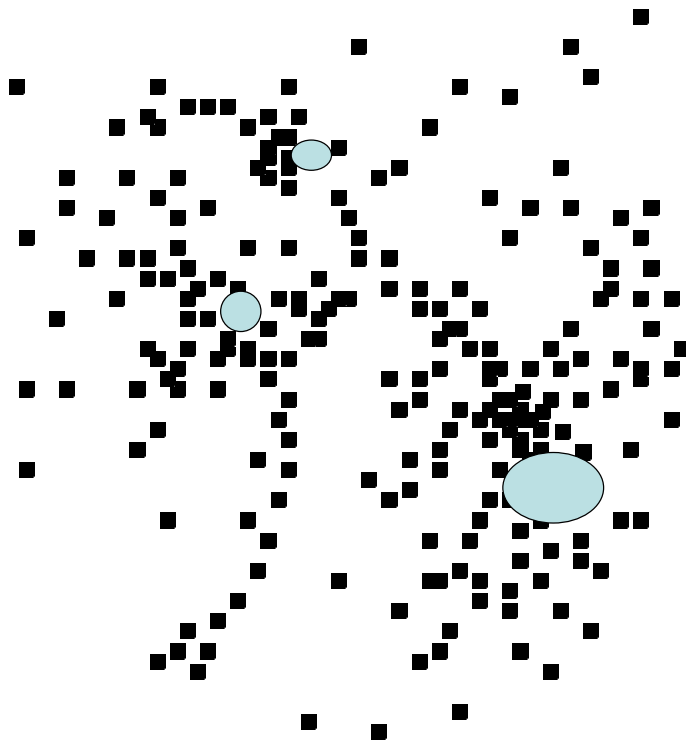


Why study these different approaches?

1. Learning from economic history
 - what was tried
 - what worked
 - what didn't
 - ...and why
2. Studying past program design, assumptions and outcomes....can inform contemporary problems.

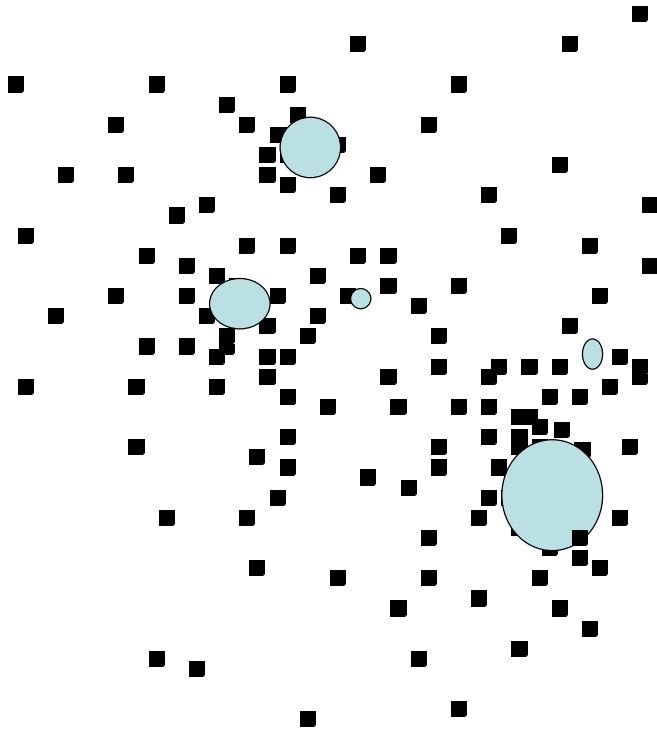
Structural Transformation / Demographic Transition

- Based on economic history of Asia and Europe (B. Johnston, J. Mellor)
 1. In early stages of development, 80% of population is primarily engaged in staple food production
 2. Raising staple crop productivity = most direct way to achieve broad-based growth in rural incomes
 3. Broad-based rural productivity growth triggers demographic transition



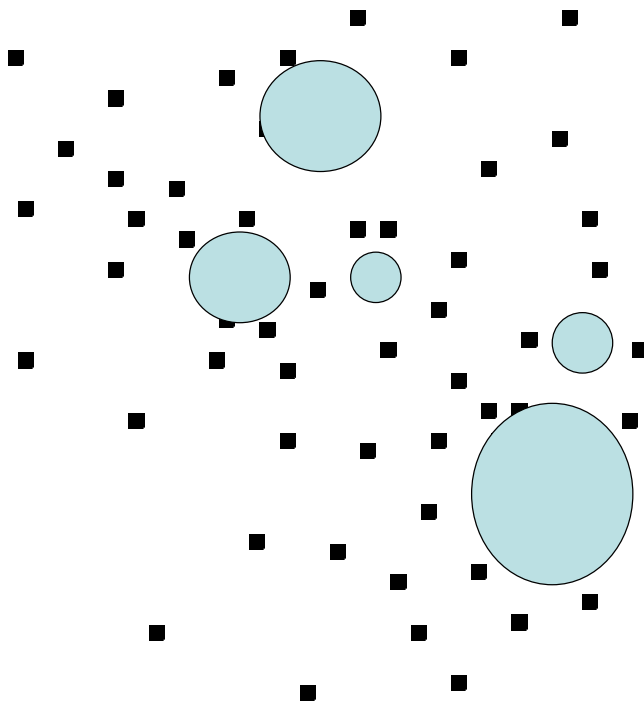
Symbiotic relationship between rural farms and towns:

- urban areas provide a market for surplus farm output
- Farmers with cash generate demand for urban employment
- As demand for off-farm jobs rises → migration from farm to towns



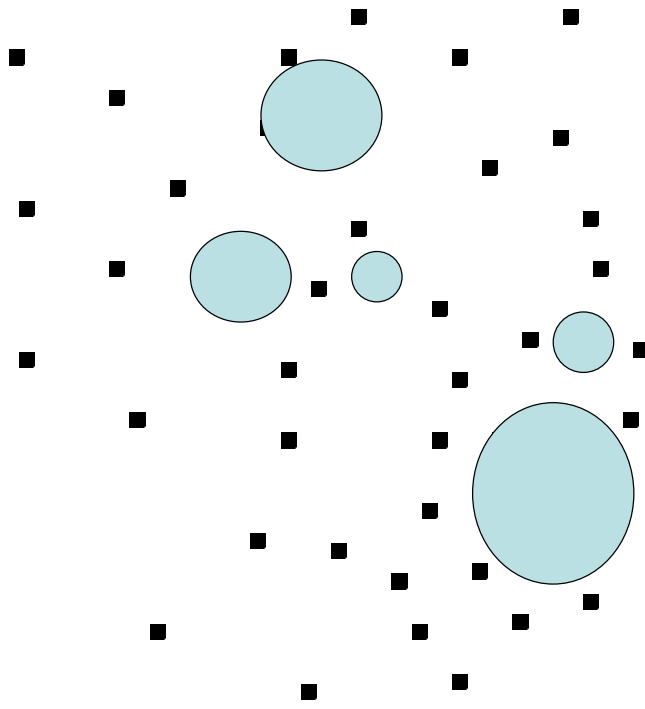
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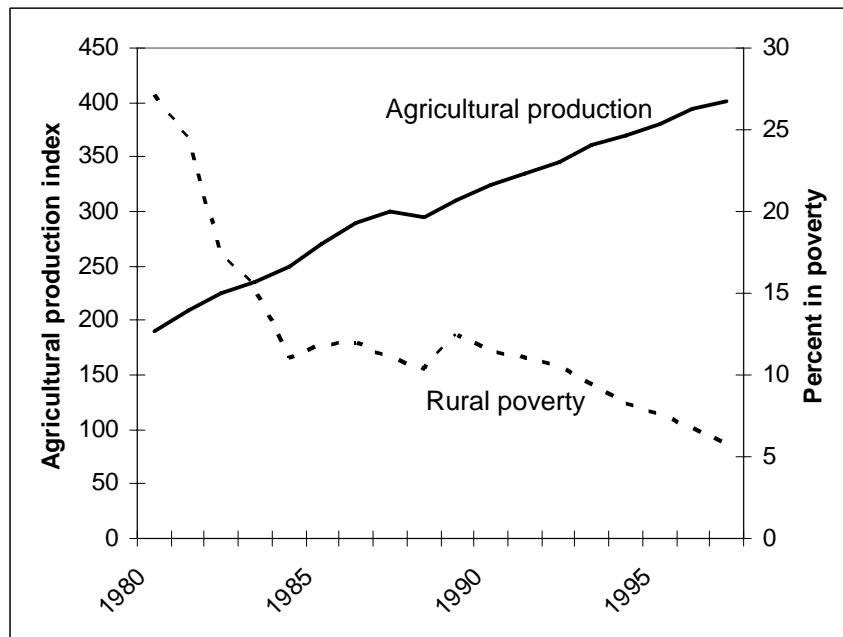
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- increased urbanization: rural labor “pulled” to urban areas
- birth rates declines
- levels of education rise
- **broad-based agricultural productivity growth starts the process**
- **Mellor-Johnston Structural Transformation / Demographic Transition**
- **Characterizes the Green Revolution History of Most of Europe, Asia, and North America**
- **FUNDAMENTALLY, A SMALLHOLDER-LED MODEL**

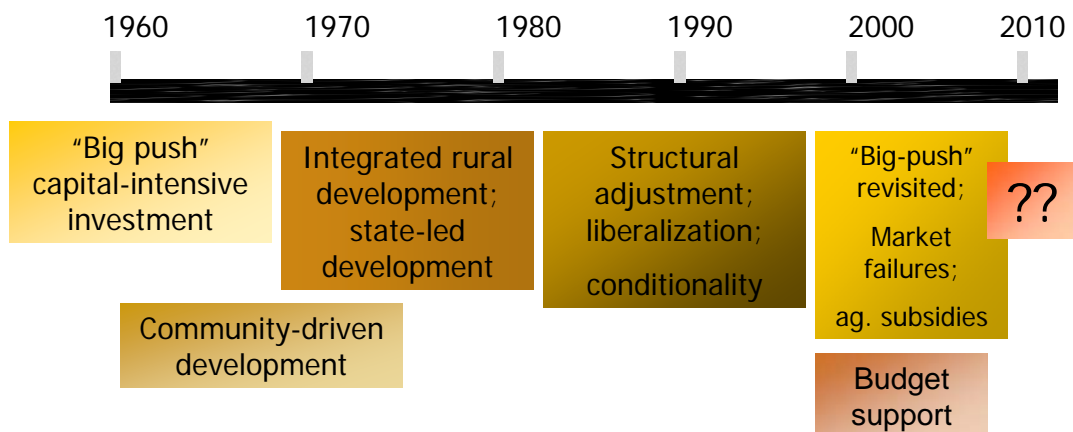
Agricultural growth and poverty reduction in China



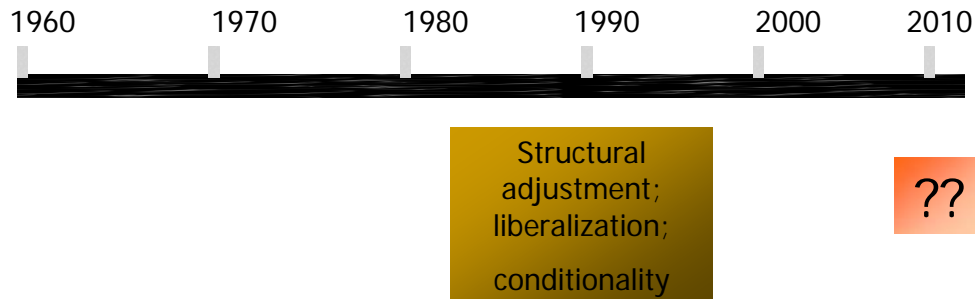
Question:

- Should we still believe in the Structural Transformation / Demographic Transition model...especially for Africa?

Major development strategies in retrospect, 1960-2000



Major development strategies in retrospect, 1960-2000



Competing Frameworks

2. “Washington Consensus”

- Spawned by disappointment with state-led approaches
- Marketing boards were inefficient, depressed producer prices
- Marketing board and input subsidies were poorly targeted, benefited the relatively well-off farmers
- Untargeted subsidies created massive deficits (hyperinflation in some cases)

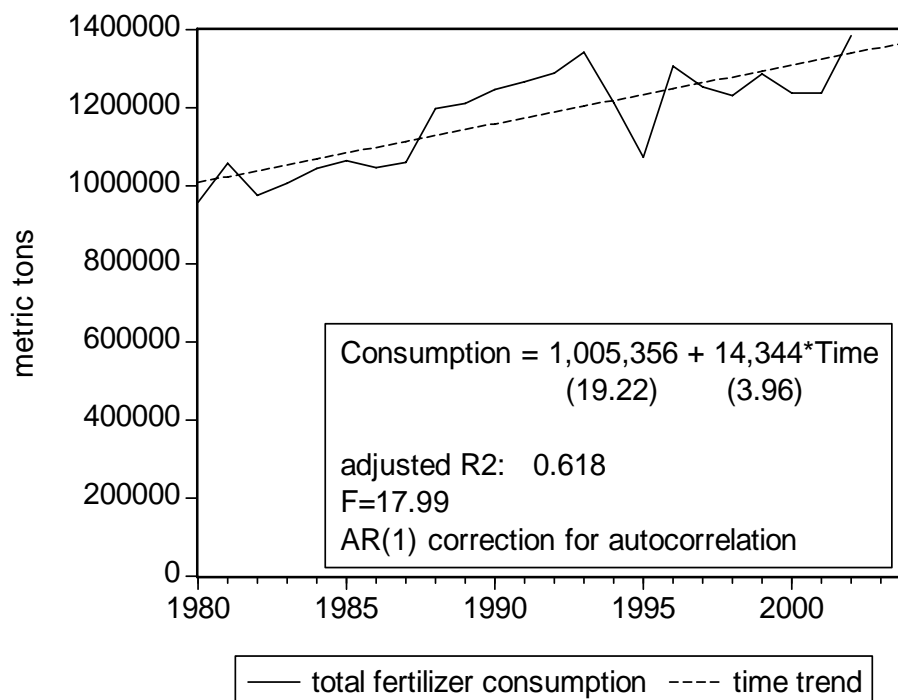
Washington Consensus – main features

1. Reduce direct state involvement in markets
2. Provide incentives for private enterprise and investment
3. Focus on “public goods” investments
 - Crop science
 - Extension programs
 - Physical infrastructure to drive down marketing costs

Critiques of Washington Consensus

1. Markets didn't develop as expected – “market failure”
2. Agricultural productivity didn't rise as fast as expected
3. Usually failed to achieve government “ownership”
 - “Smoke and mirrors”
 - “social contract”
 - input use declined ...or did it?

Fertilizer use in SSA: +16% growth between 1990 and 2004



use intensity	% growth in fertilizer use intensity (kg/ha cultivated) (mean 1996-2002 / mean 1990-95)	
	< +30%	> +30%
<25 kg/ha	<p>DRC (0.5, -47%)</p> <p>Angola (0.7, -69%)</p> <p>Niger (0.9, +5%)</p> <p>Guinea (2.0, -4%)</p> <p>Burundi (2.3, -6%)</p> <p>Madagascar (2.9, -8%)</p> <p>Mauritania (4.0, -64%)</p> <p>Tanzania (4.8, -47%)</p> <p>Gambia (5.2, +15%)</p> <p>Nigeria (5.6, -73%)</p> <p>Burkina Faso (5.9, -28%)</p> <p>Zambia (8.4, -34%)</p> <p>Mali (9.0, +7%)</p>	<p>Uganda (0.6, +237%)</p> <p>Rwanda (1.8, +89%)</p> <p>Mozambique (3.2, +142%)</p> <p>Ghana (3.6, +68%)</p> <p>Chad (4.3, +93%)</p> <p>Cameroon (5.9, +77%)</p> <p>Togo (7.0, +30%)</p> <p>Cote d'Ivoire (11.8, +53%)</p> <p>Botswana (11.8, +294%)</p> <p>Senegal (13.2, +67%)</p> <p>Ethiopia (14.4, +71%)</p> <p>Benin (17.6, +76%)</p> <p>Lesotho (23.2, +35%)</p>
>25 kg/ha	<p>Swaziland (30.5, -40%)</p> <p>Malawi (30.8, +9%)</p> <p>Zimbabwe (48.3, +9%)</p>	<p>Kenya (31.8, +33%)</p>

Competing approaches:

3. “Big push” agricultural strategy

- Sachs, Sanchez,...maybe Gates?
- Need much greater funding for plethora of needs
- Input subsidies -- how did China and India get their Green Revolutions?

Current thinking

1. A great deal of debate about appropriate agricultural development and poverty reduction strategies
2. World Bank and USAID still holding on to main tenets of Washington Consensus
3. DFID and others have moved to more immediate ways to reduce poverty (e.g., social protection)
4. But the appropriate *growth agenda* is still under great debate

Many of these debates can be guided by evidence on smallholder conditions and behavior

Six “empirical regularities” of African smallholder agriculture:

Fact #1

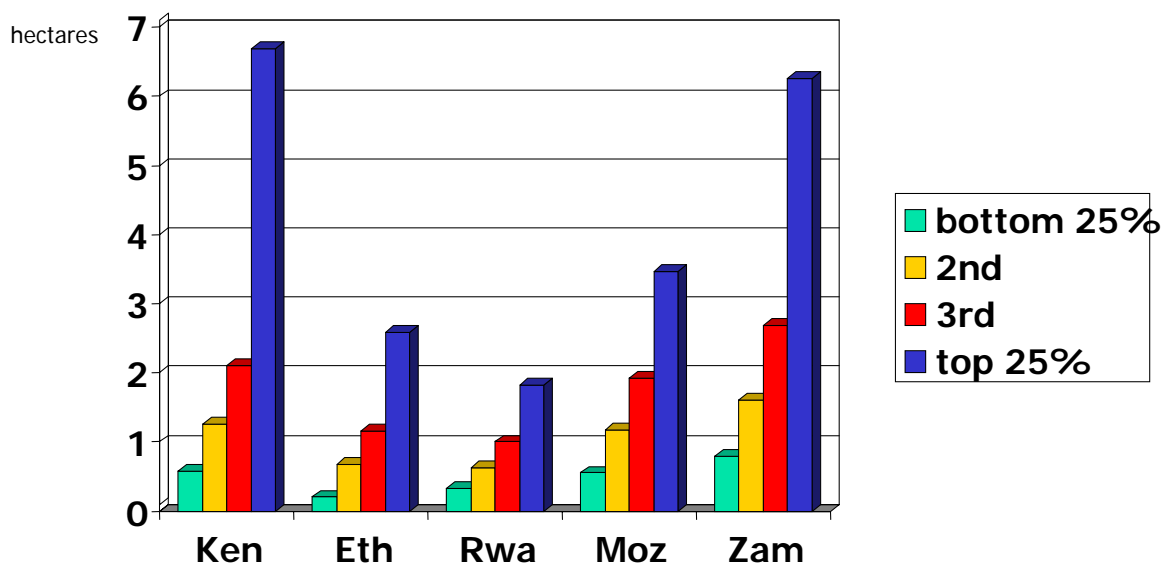
- Emerging land pressures are generating fundamental challenges for poverty reduction and investment strategies

Cultivated land per agricultural person (hectares)

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

Source: FAOStat website: Source: FAO Stat database: www.faostat.fao.org/

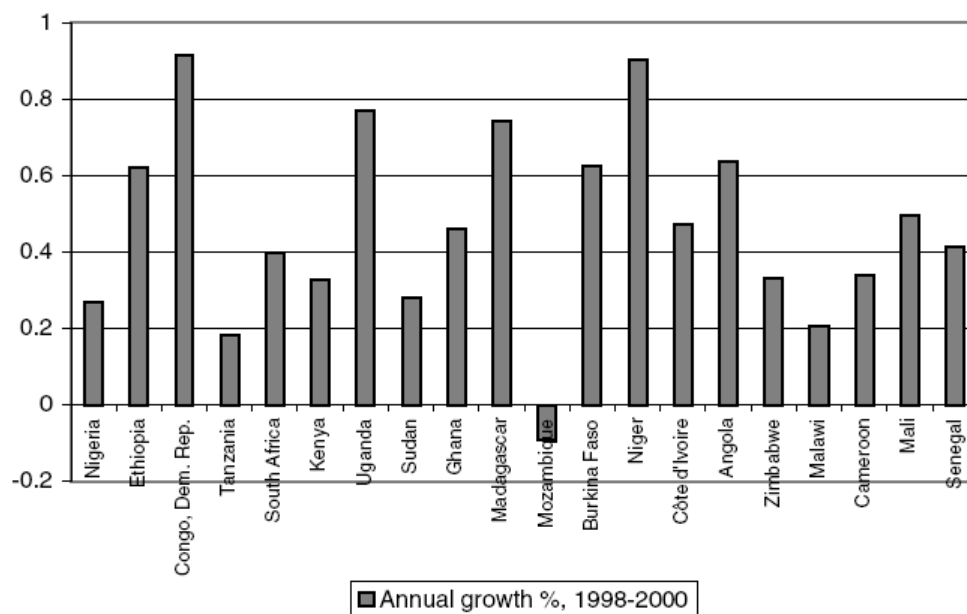
Farm size distribution: Small farm sector



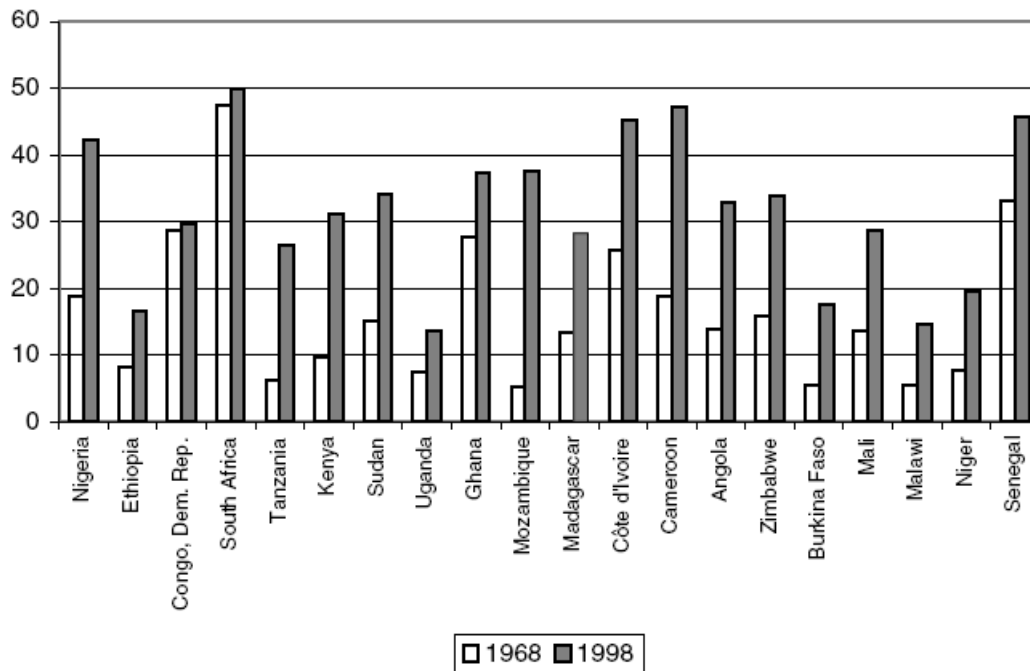
Characteristics of smallholder farmers, Zambia 1999/00

	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	36	291

Rural population growth rates



Share of Urban population in total population, 1968 and 1998

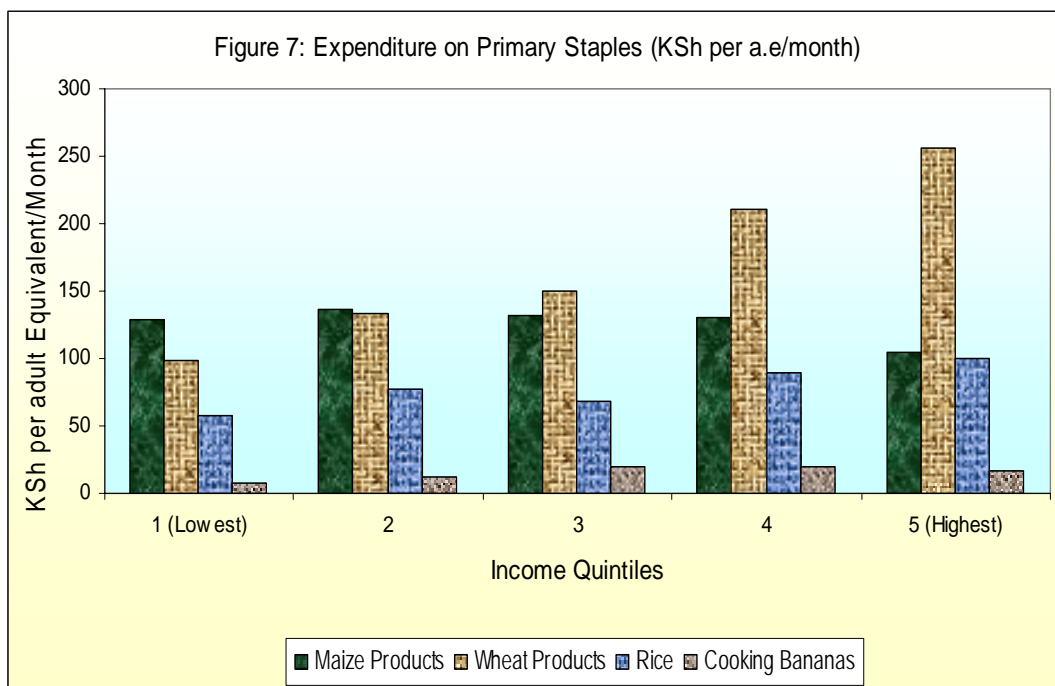


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- More than 50% of Africa's population will be urban by 2015.
 - 2000: 10 farm households feed 7 non-farm households
 - 2020: 10 farm households feed 16 non-farm households
 - Upshot: urban demand for food is rising rapidly

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

- 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

- 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

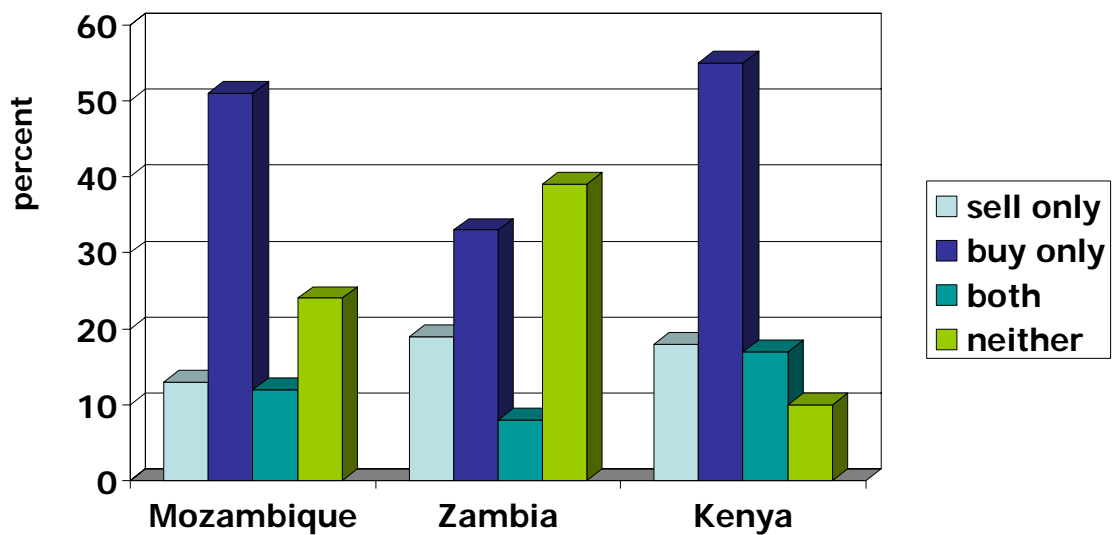
Role of maize in small farm incomes is declining (share of gross sales revenue)

	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

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

Smallholder Households' Position in the Maize Market



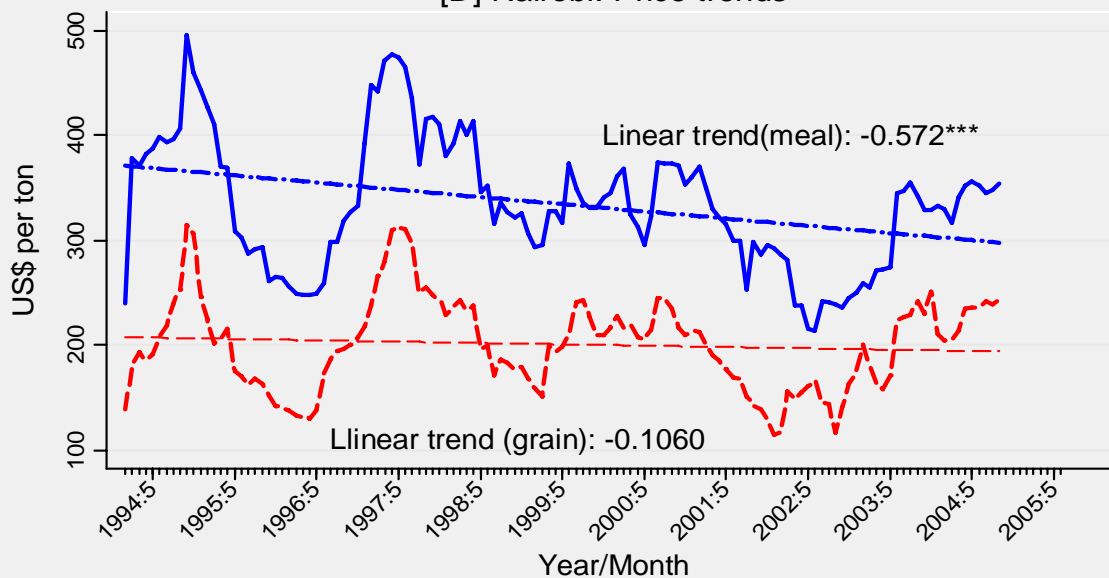
Fact #3

- 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

- Retail maize meal prices are trending downward

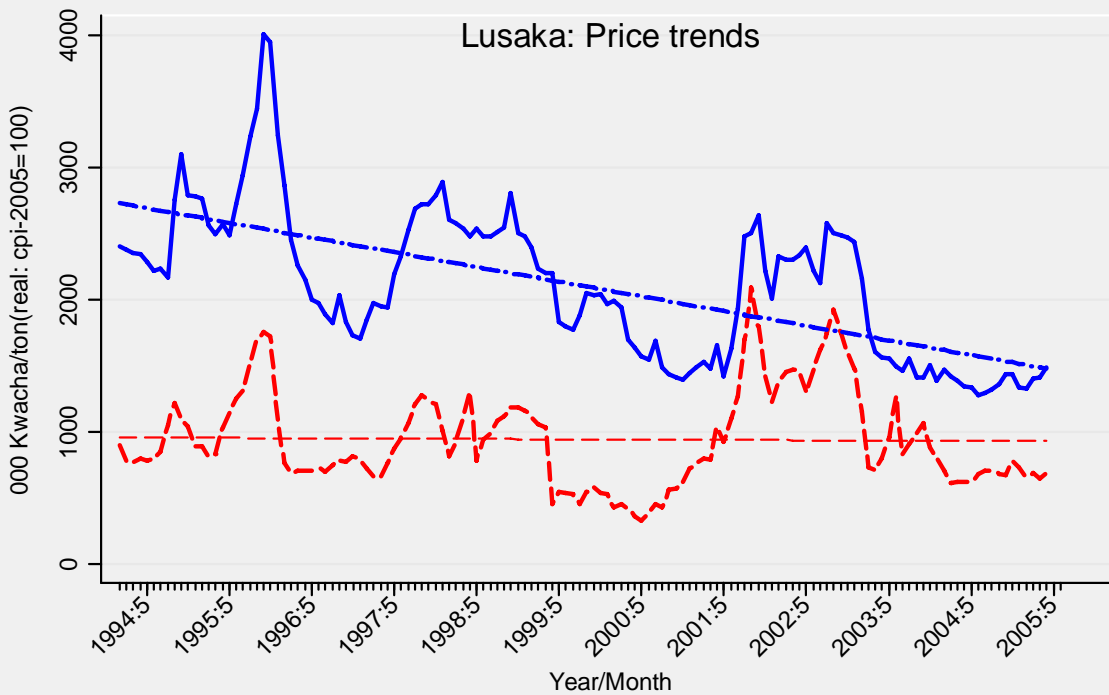
[D] Nairobi: Price trends



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

*** 1% level of significance

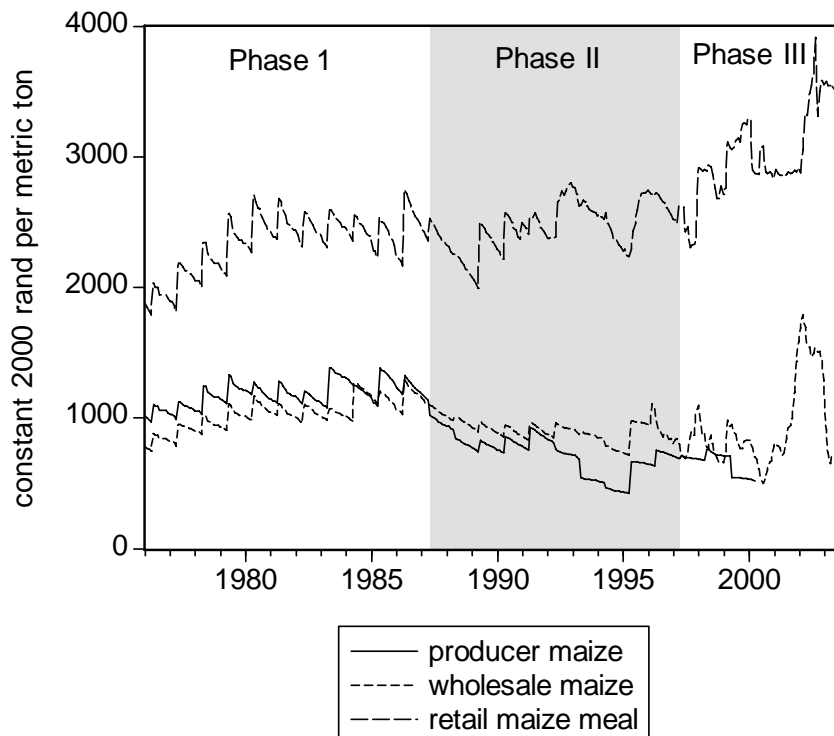
Lusaka: Price trends



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

Fact #4

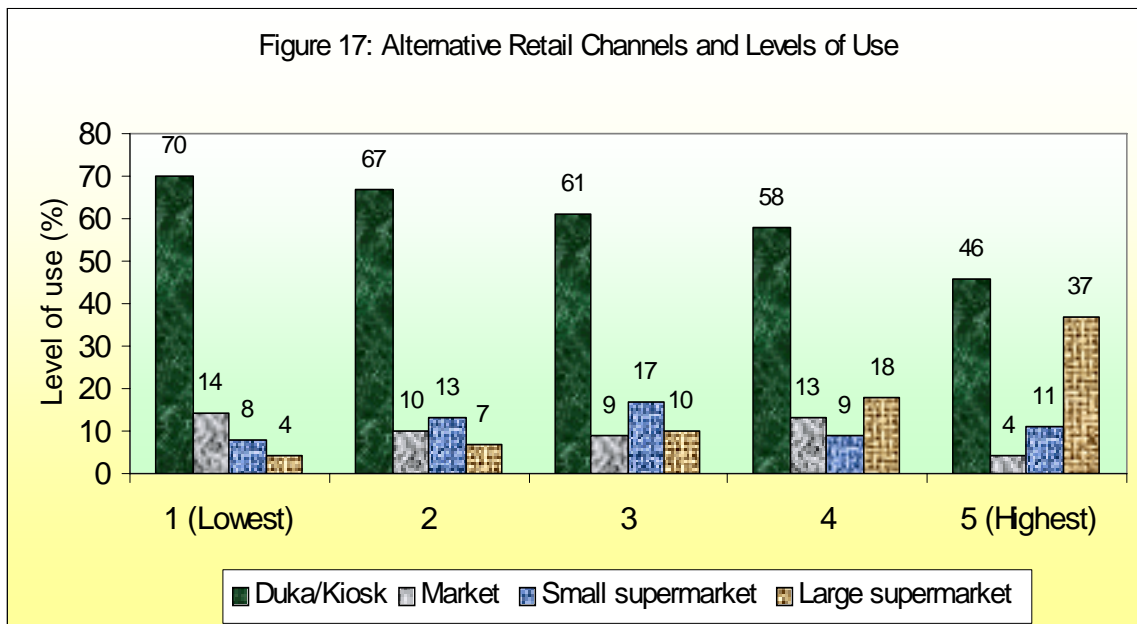
- Retail maize meal prices are trending downward
- Why?
 - Food market reform has encouraged rapid investment in informal, small-scale milling and trading networks
 - The informal channel exerts competitive pressure on commercial millers/retailers
 - Exception: South Africa



Fact #5

- The performance of “traditional” food systems will remain a much more important determinant of farmer welfare and consumer food security than “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



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

12.4% market share in 2016.

Fact #7:

- Available survey evidence indicates that government fertilizer subsidy programs generally not targeted to the poor

Zambia	Total Income	Assets	Landholding size
	'000 kwacha per capita		ha per capita
Fertilizer source:			
<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

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

IFPRI review of rate of return studies:

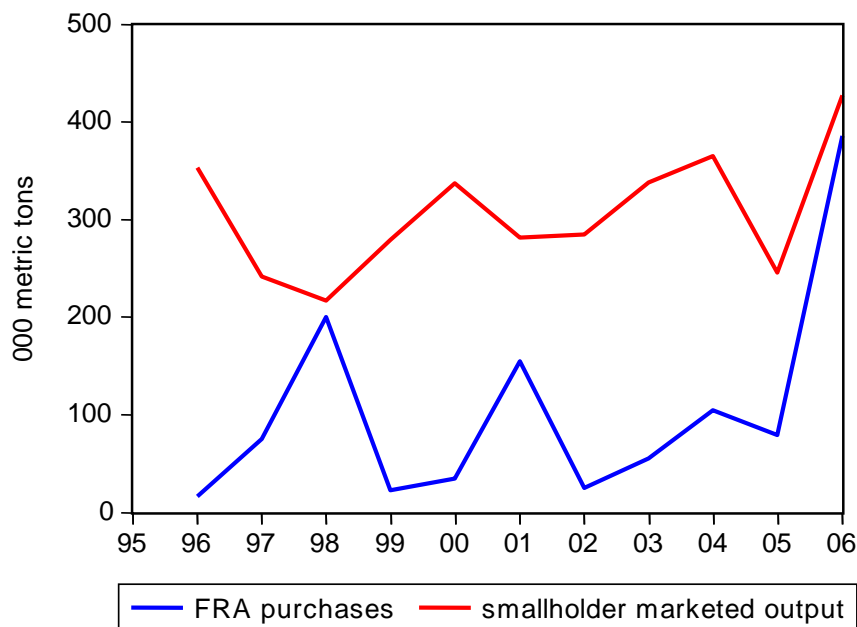
	Returns
Subsidies	Negative – 12%
Investments	
- research & extension	35% to 70%
- roads	20% to 30%
- education	15% to 25%
- communications	10% to 15%
- irrigation	10% to 15%

If we believe these findings, they have major implications

Fact #7

- ❑ 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

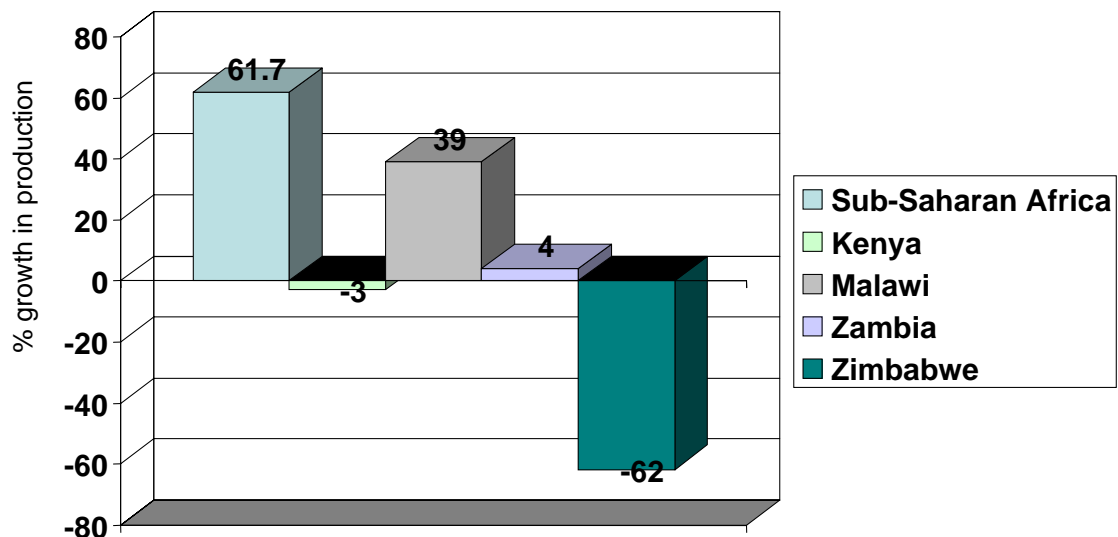
- Export bans, import quotas
- Uncertainty over changes in import tariff rates
- When and where will marketing boards enter the market, at what price



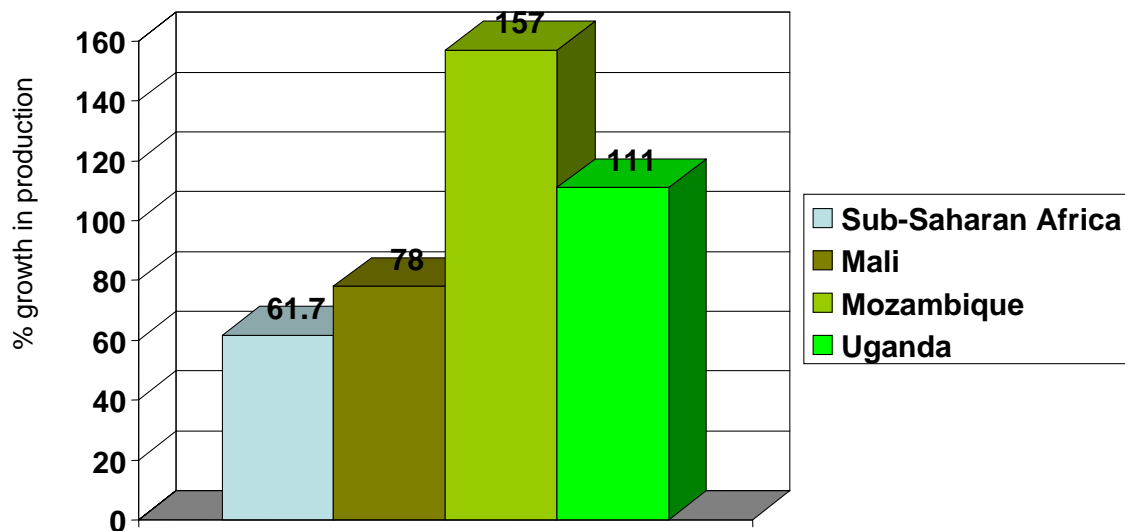
Sources of Policy Unpredictability

- 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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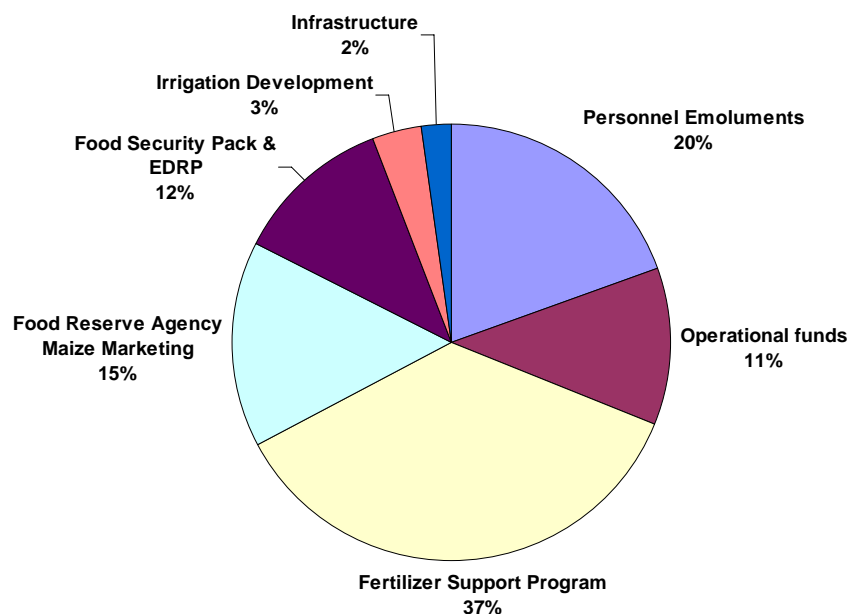
Where from here?

- 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

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)

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



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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 “failed states” in Africa

Major Challenge:

- how best to encourage governments to reallocate public budgets toward crucial investments with long-term payoffs instead of investments with short-term payoffs with limited impact on L.T. development?
- Future of ‘untied’ budget support?

Getting Markets Right: What does this mean?

- Not getting government out of markets
- Changing the *role* of government from direct intervention to supportive investments to make markets work
 - Public goods investment
 - Support development of farmer organizations
 - Create “stable” policy environment: Clear, rule-based public operations in markets
 - Commodity risk management tools (e.g. warehouse receipt systems)
 - Greater transparency and consultation needed between private and public sectors

Policy response (cont.)

- Lobby forcefully for more level playing field in international trade
 - OECD support for Africa: \$50 bill./yr
 - OECD ag. subsidies: \$350 bill./yr
 - Reassess developed country policy of dumping free food in Africa under guise of “food for development”



thank you