Toward the Identification of Priority Investments and Strategies for Developing Food Markets and Smallholder Agriculture

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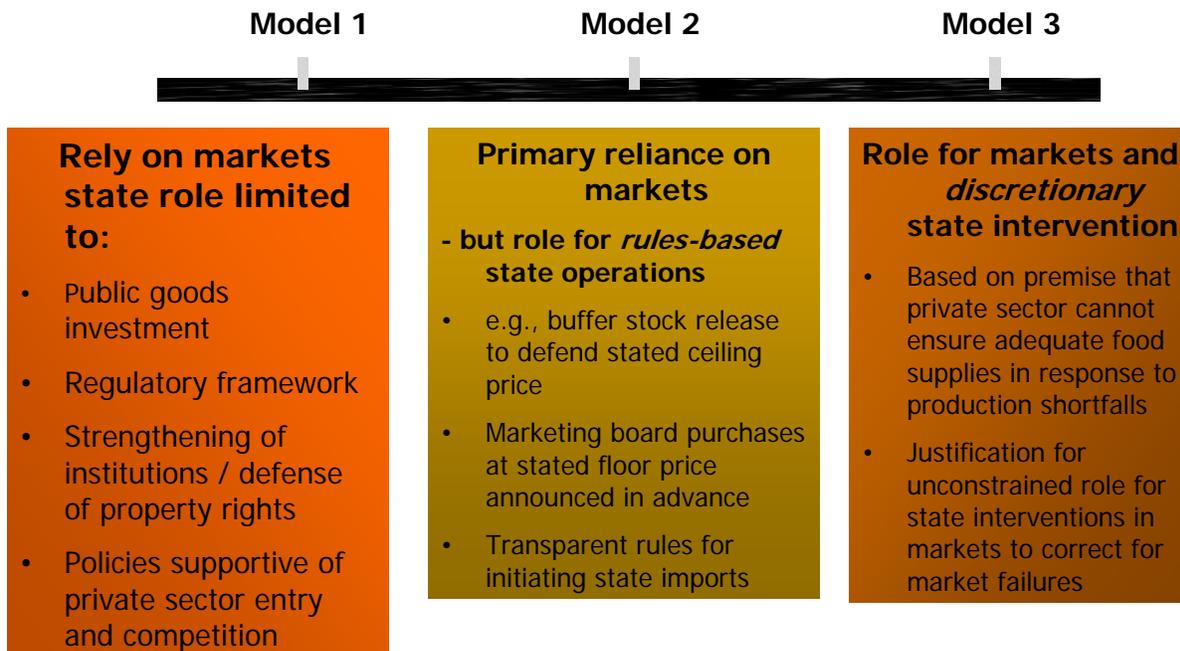

Organization of presentation:

1. What are the major problems?

2. Main findings

3. Policy implications ("take-away messages")

4. Elements of the way forward (focusing on "first order" issues)

Current thinking on "strategy"

❑ Consensus about need for greater investment in public goods (infrastructure, extension, crop science) to improve functioning of markets

❑ Continuing debate regarding what constitutes the right "enabling environment"

- Appropriate role of government in markets
- 3 alternative "visions": each one affecting behavior and incentives of private sector

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Competing models of roles of state and private sector in food markets:

Model 1   **Model 2**   **Model 3**

Rely on markets state role limited to:

- Public goods investment
- Regulatory framework
- Strengthening of institutions / defense of property rights
- Policies supportive of private sector entry and competition

Primary reliance on markets

- but role for *rules-based* state operations

- e.g., buffer stock release to defend stated ceiling price
- Marketing board purchases at stated floor price announced in advance
- Transparent rules for initiating state imports

Role for markets and *discretionary* state intervention

- Based on premise that private sector cannot ensure adequate food supplies in response to production shortfalls
- Justification for unconstrained role for state interventions in markets to correct for market failures
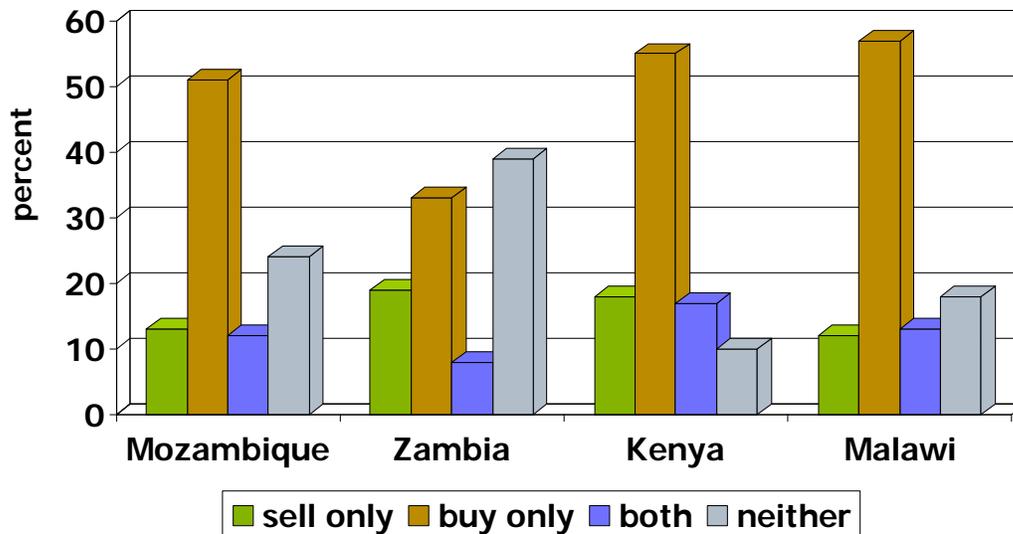
Informing the debate

- Many of the debates about the "right" strategy can be informed by a solid empirical understanding of how rural economies and markets work

Fact #1

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

Smallholder Households' Position in the Maize Market

percent

Mozambique Zambia Kenya Malawi

sell only buy only both neither

- Do these findings reflecting a problem of access to markets?   Premise: if markets could be developed better, many more smallholders would be growing more for the market

Farmers' access to markets

Number of traders buying maize from farmers in village – 2009 Maize Value Chain Study

Legend: Kenya (green), Zambia (blue)
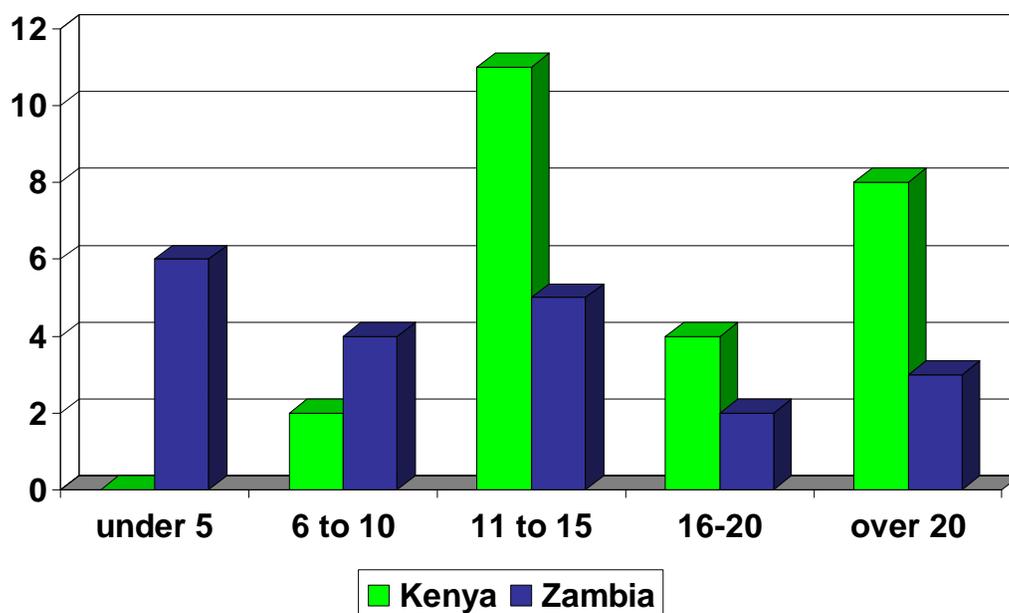
Farmers' access to markets

- Median distance travelled by farmers to point of maize sale in Kenya = 0
- Importance of cell phone ownership on ability to find buyers

Main reasons why smallholders don't sell to markets:

- Lack of productive assets – ploughs, harrows, ox-carts, know-how
- Constraints on access to land

  → can't produce a marketable surplus

Farm size distribution: Small farm sector

hectares

Legend:
- bottom 25%
- 2nd
- 3rd
- top 25%

Countries: Ken, Eth, Rwa, Moz, Zam
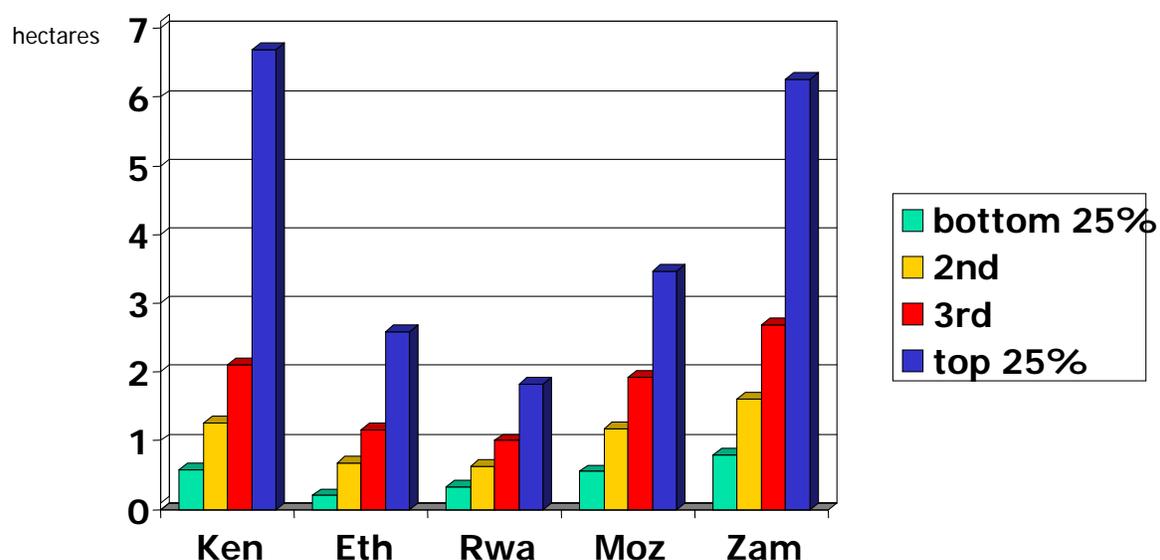
# Characteristics of smallholder farmers, Zambia 2003/04

|	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	31,328 (2%)	4.3	1,132	720	1163	2,932
Rest of maize sellers	328,561 (26%)	1.6	316	88	193	634
Households not selling maize	907,255 (72%)	0.9	231	0	97	415

Rural population growth rates

Annual growth %, 1998-2000
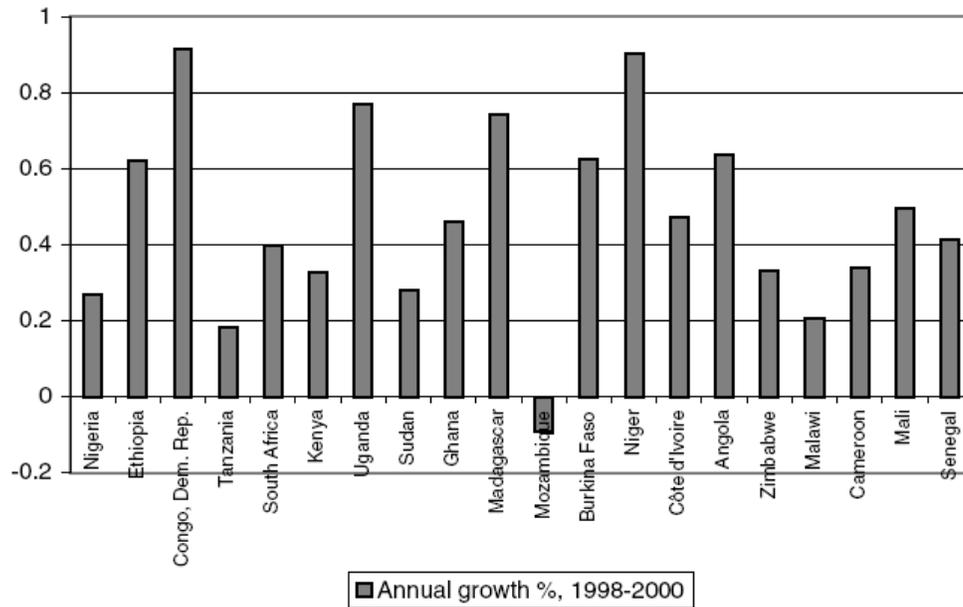
Share of urban population in total population, 1968 and 1998

1968   1998
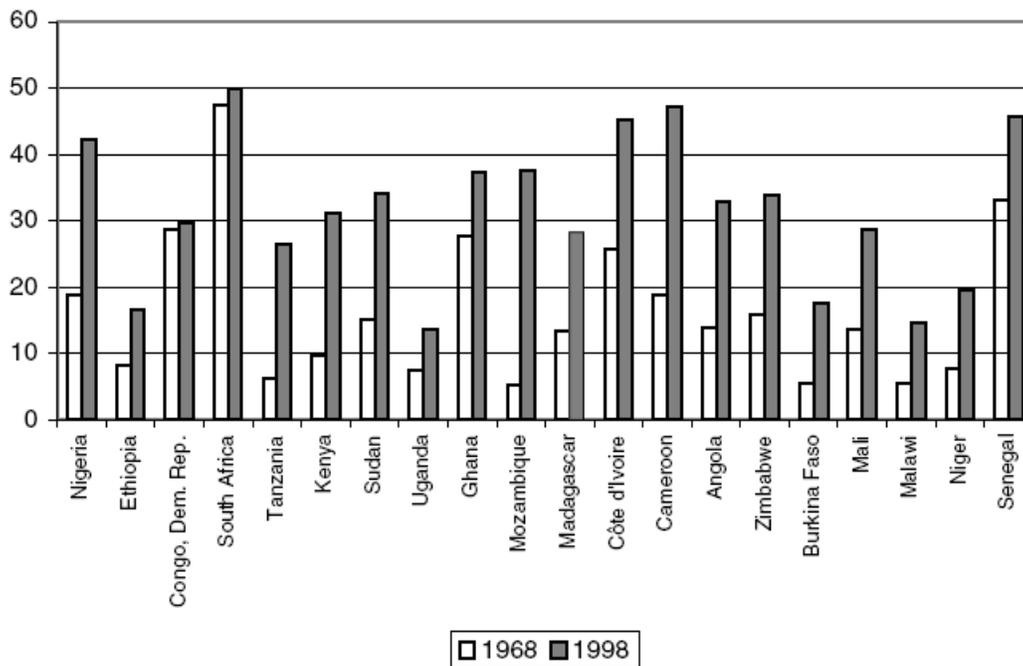
Are imported wheat and rice crowding out domestically-produced grain?

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

Wheat product consumption trends - Zambia

Legend:
— Wheat product consumption (MT)
- - - Wheat product consumption (kg/capita)
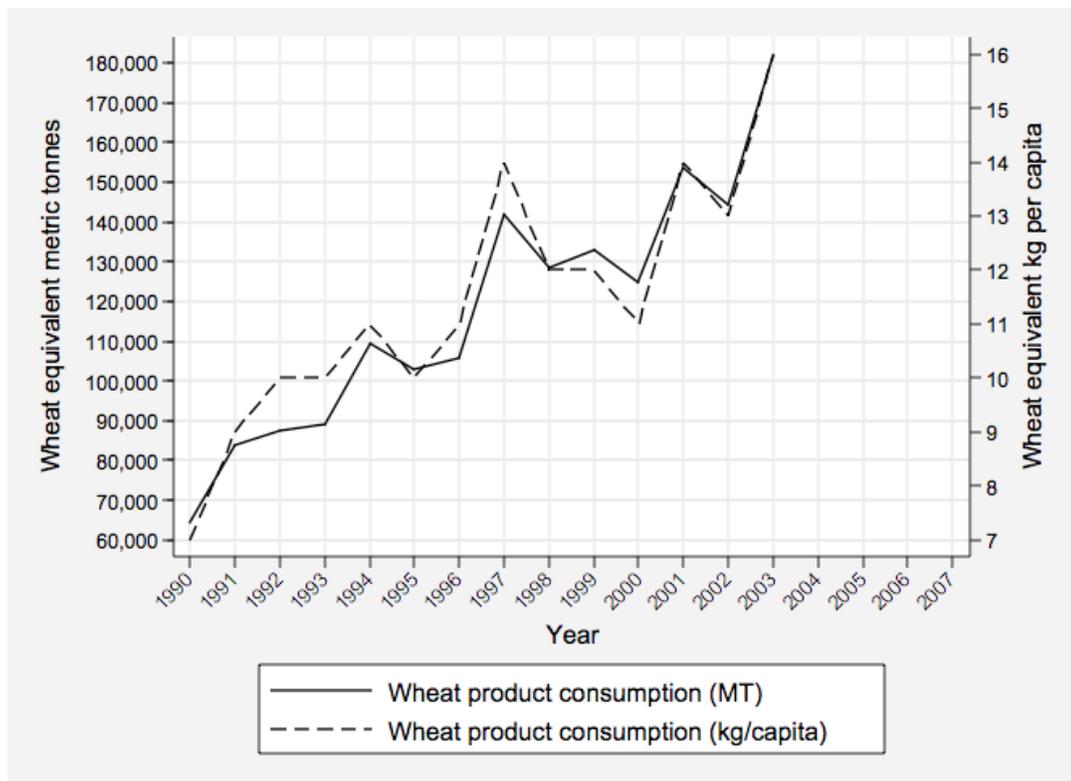
Diversification of consumption patterns due to increasing wheat imports

Urban center	Year	% share of main staples budget ("main staples" = maize, wheat, rice and cassava)				Main staples % share of total food budget
		Maize	Wheat	Rice	Cassava	
Nairobi	2003	36	39	25	0	28
Maputo Province	2002	9	57	29	5	27
Northern Mozambique*	2002	33	8	15	44	48
Lusaka	2007/8	39	49	11	1	20
Kitwe	2007/8	43	45	10	2	23
Mansa	2007/8	46	28	10	16	24

*includes Nampula city

Importance of Imported Staples in Nairobi Expenditure Patterns

Figure 7: Expenditure on Primary Staples (KSh per a.e/month)
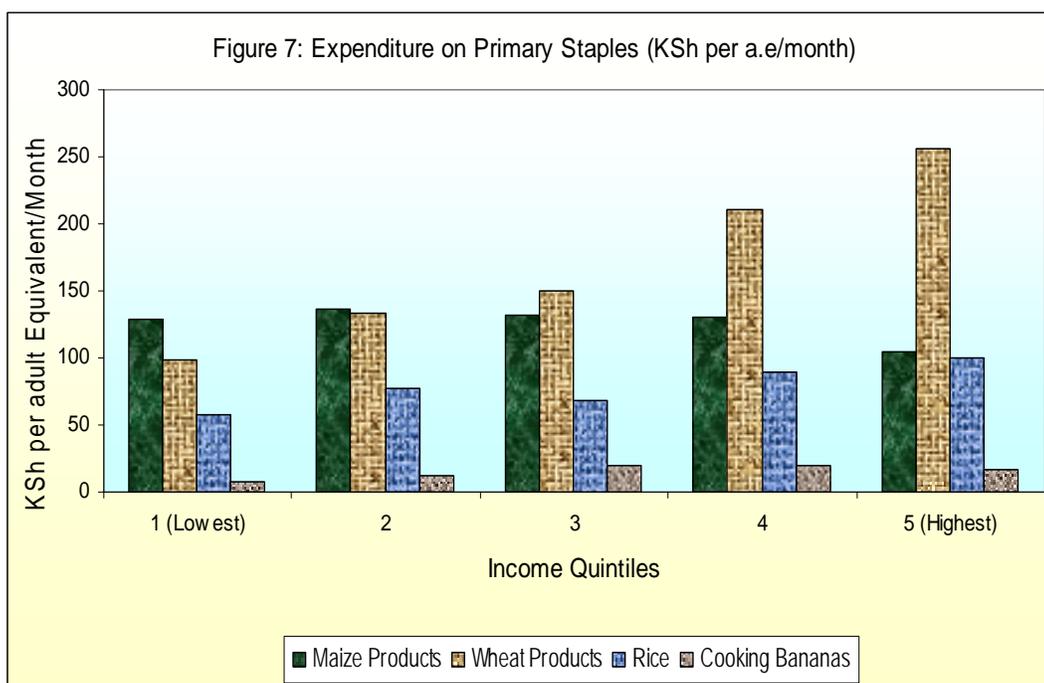
Take-away message #1

- Most rural farm households are buyers of maize (or net buyers)
- 2% of households account for 50% of marketed grain surplus
- High food prices:
  - highly concentrated benefits
  - Adversely affects the rural poor
  - Most likely impede small farm diversification into higher-valued activities

Take-away message #2

- **Demand for food is rising rapidly, leading to secular rise in food prices to import parity**
  - 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

Take-away message #3

- ***Demand for quality land is skyrocketing***
  - Demand for agricultural land = derived demand for food
  - Rapid urbanization of Africa resulting in non-linear growth in demand for food

Why do food prices often soar above import parity?

Maize prices vs. import parity: Lilongwe, Malawi

Chart showing nominal USD per metric ton (y-axis, 0 to 700) from 1996 to 2008. "Lilongwe retail" (blue line) and "c.i.f. Lilongwe from South Africa" (red line).
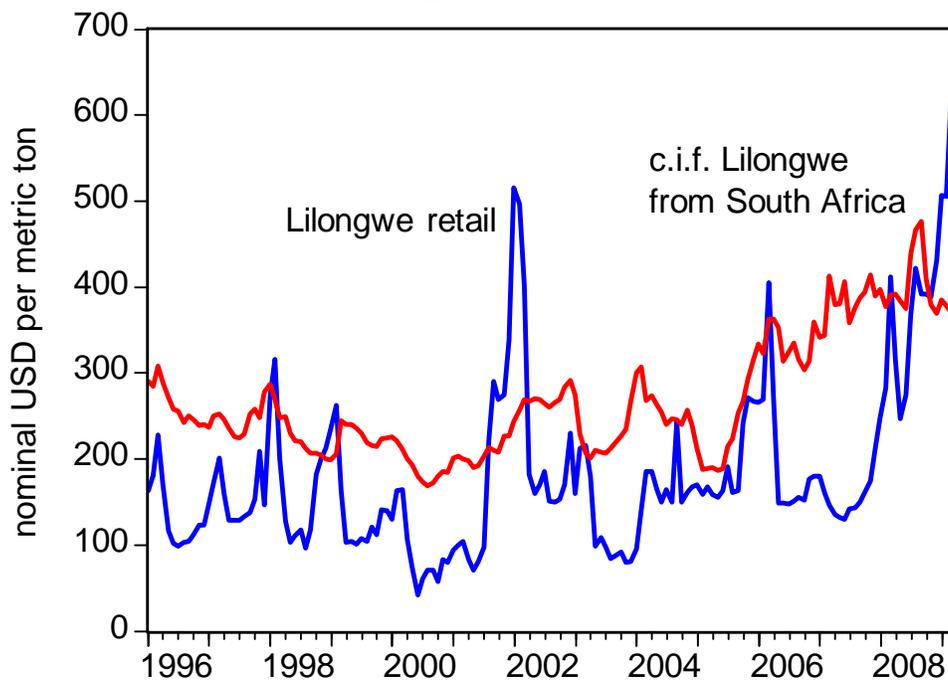
Maize prices vs. import parity: Lusaka, Zambia

nominal US$ per metric ton

c.i.f. from South Africa

Lusaka retail

500
400
300
200
100
0

1996 1998 2000 2002 2004 2006 2008

Market failures are often caused by government failure

National food production shortfall anticipated → Who's going to import? And how much? → State announces plan to import X tons

↓

Supplies dwindle; prices skyrocket ← State incurs delays in contracting for imports ← Private traders sit on sidelines

Market failures are often caused by government failure

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┌──────────────┐     ┌──────────────┐     ┌──────────────┐
│ National food│     │ Who's going  │     │State announces│
│ production   │ ──▶ │ to import?   │ ──▶ │plan to import│
│ shortfall    │     │ And how much?│     │   X tons     │
│ anticipated  │     │              │     │              │
└──────────────┘     └──────────────┘     └──────────────┘
                                                  │
                                                  ▼
┌──────────────┐     ┌──────────────┐     ┌──────────────┐
│Supplies dwindle;│  │ State incurs │     │Private traders│
│prices skyrocket │◀─│ delays in    │ ◀── │  sit on      │
│                 │  │contracting for│    │  sidelines   │
│"EVIDENCE THAT   │  │  imports     │     │              │
│MARKETS FAIL!"   │  │              │     │              │
└──────────────┘     └──────────────┘     └──────────────┘
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Take-away #4: Need to redress the problems of credible commitment/trust

Sources of policy unpredictability:

- Export bans, import quotas (year to year & within year)

- Uncertainty over whether government will import and sell at below-market prices to millers

  - recent examples: Zambia, Malawi, Kenya 2008/09

- Quantities and prices at which the MBs buy and sell are often not disclosed
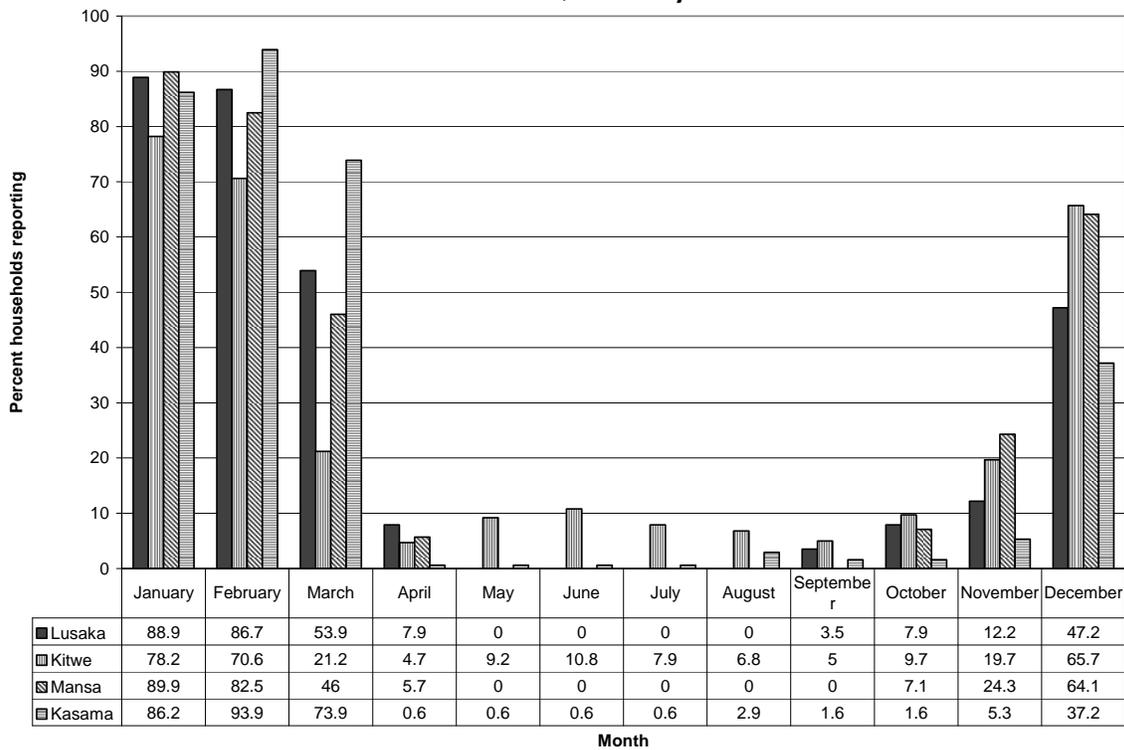
Under-provision of seasonal storage:

5 main reasons:

1. Threat of grain confiscation (e.g., Malawi, Ethiopia, Kenya)
2. In areas with staggered harvest seasons (Kenya, Uganda, N. Tanz) relatively small seasonal price rises
3. Unpredictable government operations
4. Local banks find grain markets very risky compared to government T-bills
5. Lack of moisture content quality standards

Outcomes of under-provision of seasonal storage:

1. Greater seasonal price variability than would otherwise occur
2. Most grain surpluses sold off and transported to deficit areas early in season
3. Areas that are surplus after harvest turn deficit in the hunger season as deficit households turn to the market for food
4. Circuitous rural-urban-rural flow of maize – redundant transport costs and higher marketing margins
5. Informal markets dry up → structure of milling and retailing becomes highly concentrated (p. 70)

Percentage of urban consumers indicating that maize grain is unavailable to buy in local markets, four cities in Zambia, 2007/08

| Month	January	February	March	April	May	June	July	August	September	October	November	December
Lusaka	88.9	86.7	53.9	7.9	0	0	0	0	3.5	7.9	12.2	47.2
Kitwe	78.2	70.6	21.2	4.7	9.2	10.8	7.9	6.8	5	9.7	19.7	65.7
Mansa	89.9	82.5	46	5.7	0	0	0	0	0	7.1	24.3	64.1
Kasama	86.2	93.9	73.9	0.6	0.6	0.6	0.6	2.9	1.6	1.6	5.3	37.2

Take-away message #5

1. Take steps to ensure availability of grain circulating year-round in informal markets

Take-away #6: Making the demand for grain more elastic

- How to ensure that prices don't plunge when supply expands
- The elasticity of demand is a function of government policy and public investment patterns
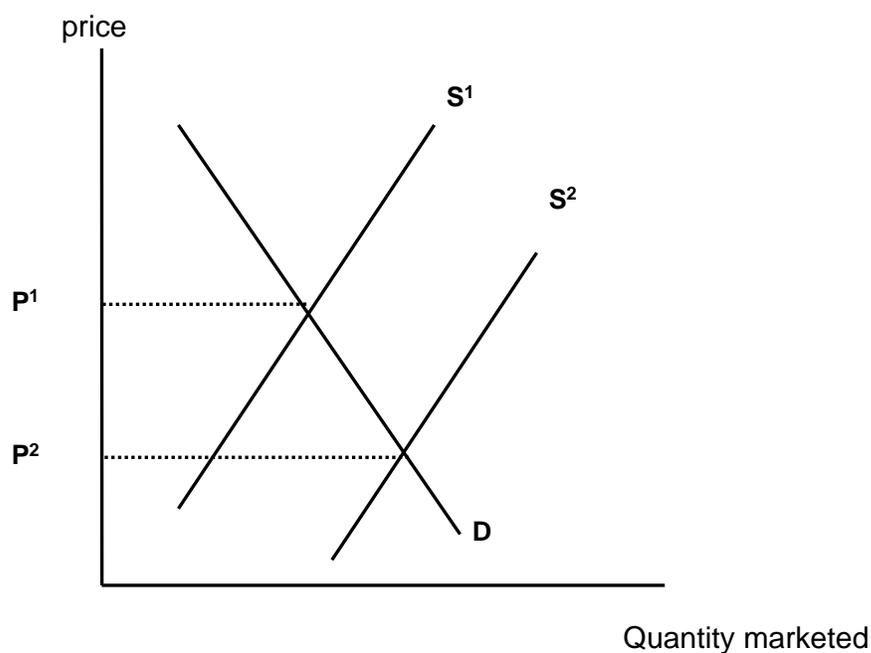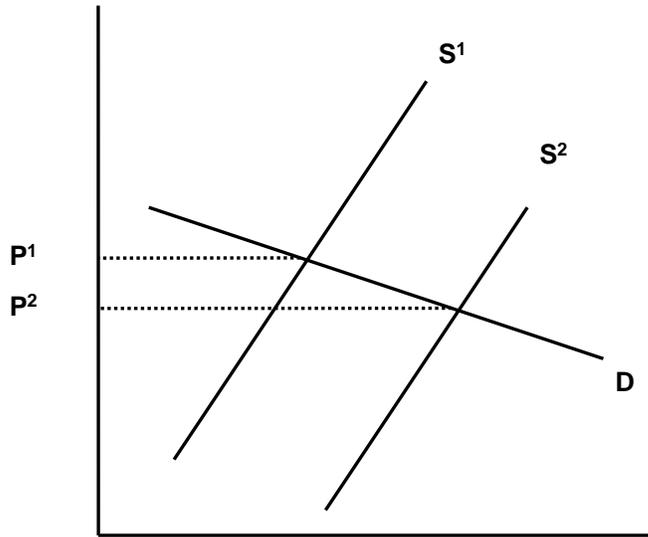
price

S¹

S²

P¹ ....

P² ....

D

Quantity marketed

Slope of demand curve influenced by:

- transport infrastructure
- incentives for investment in storage
- supporting alt. end use industries
- finance available to traders (e.g., warehouse receipt systems)
- trade / policy barriers (e.g., export bans, import tariffs)

MOST OF THESE FACTORS ARE INFLUENCED BY GOVERNMENT BEHAVIOR

Slope of demand curve influenced by:
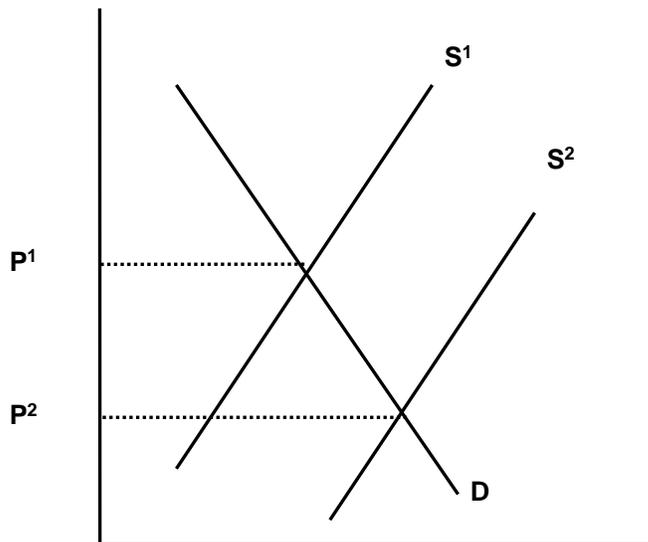
- transport infrastructure
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Conclusions and Implications for Strategy

Main problems with staple food markets

1. Staple food markets very price inelastic – supply expansion causes price drops → disincentives for farmers to adopt productivity-enhancing tech
2. Informal markets become thinly traded in hunger season → market structure becomes more concentrated → consumers pay more
3. Concentration of marketed surplus, partly due to extreme land disparities
   - rarely do more than 40% of smallholder sell grain in any given year, not because buyers can't be found, but because of limited productive assets + access to improved tech to produce a marketable surplus.

Main problems with markets

4. Many market failures reflect underlying problems of governance and chronic underinvestment in public goods. High payoffs to public goods (p. 15-17), but often crowded out by large-scale input promotion programs with uncertain payoffs. Vicious cycle → renewed felt need for government interventions
5. *Ad hoc* interventions → highly unpredictable input and output market policy environment → lack of credible commitment necessary to spur private K investment in ag.

What to do?

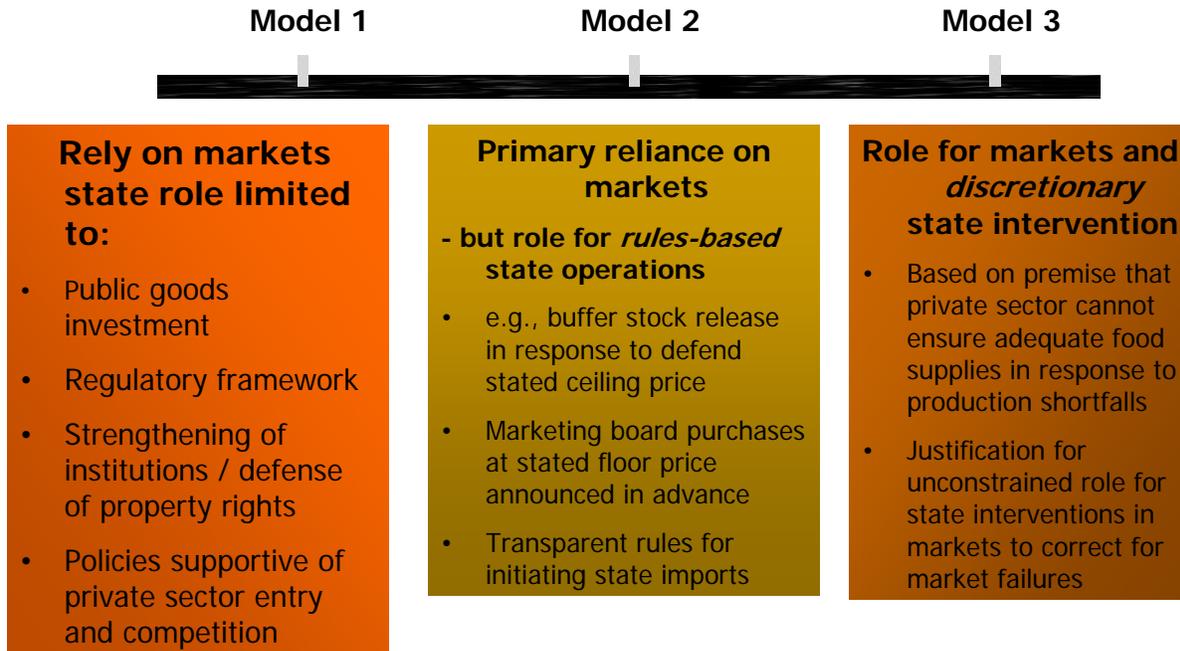Take actions to make demand for grain more elastic

1. Investments in road infrastructure
2. Support regional trade
–   Streamline customs clearance procedures
–   Eliminate export bans, import bans, duties on grain between regional neighbors, e.g., among COMESA countries
3. Support development of animal feed industries and alternative end uses

What to do? (2)

4. Provide incentives for banks and private capital to want to invest in staple food markets to serve smallholder farmers

- Support sale or long-term leasing of existing marketing board storage facilities
- Underwrite portion of risk involved in private investment in storage facilities

    Progress on most of these will require governments to move away from Model 3

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Model 1   **Model 2**   **Model 3**

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- Policies supportive of private sector entry and competition

Primary reliance on markets

- but role for *rules-based* state operations

- e.g., buffer stock release in response to defend stated ceiling price

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Role for markets and *discretionary* state intervention

- Based on premise that private sector cannot ensure adequate food supplies in response to production shortfalls

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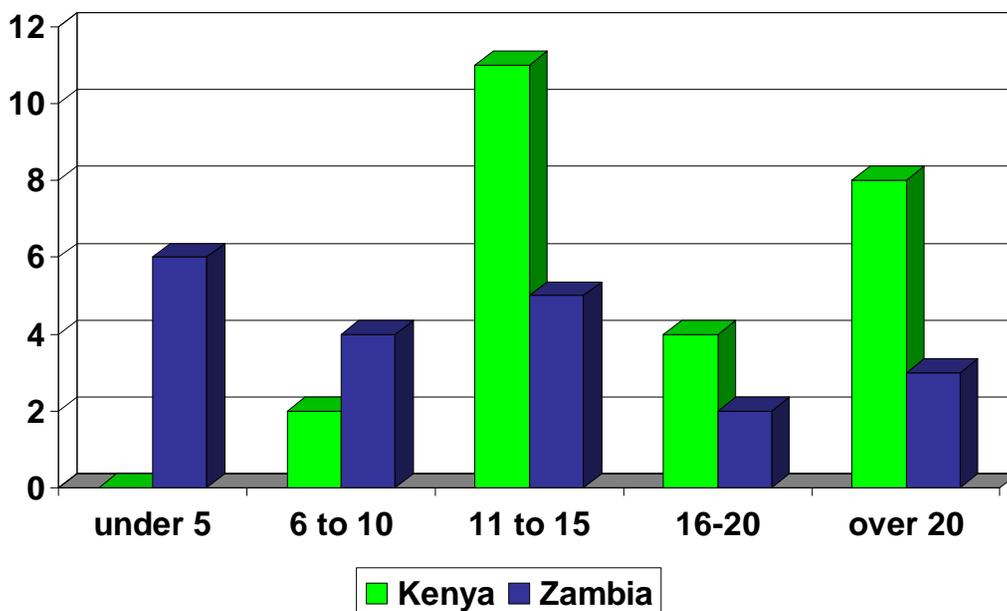
What to do? (3)

4. Work with governments to show that it is in their long-term interests to increasingly adopt Model 1 or 2 in order to view the private sector as an ally in achieving smallholder agricultural growth, not an enemy

   - Formal govt-private sector consultations
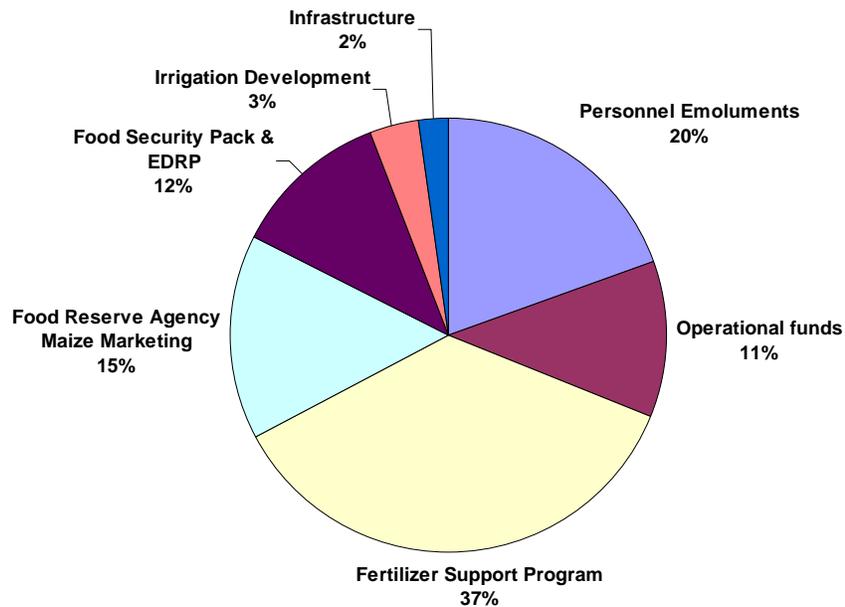   - Work out the details of a rules-based approach to government involvement in markets – periodic stakeholder fora

One view of liberalization

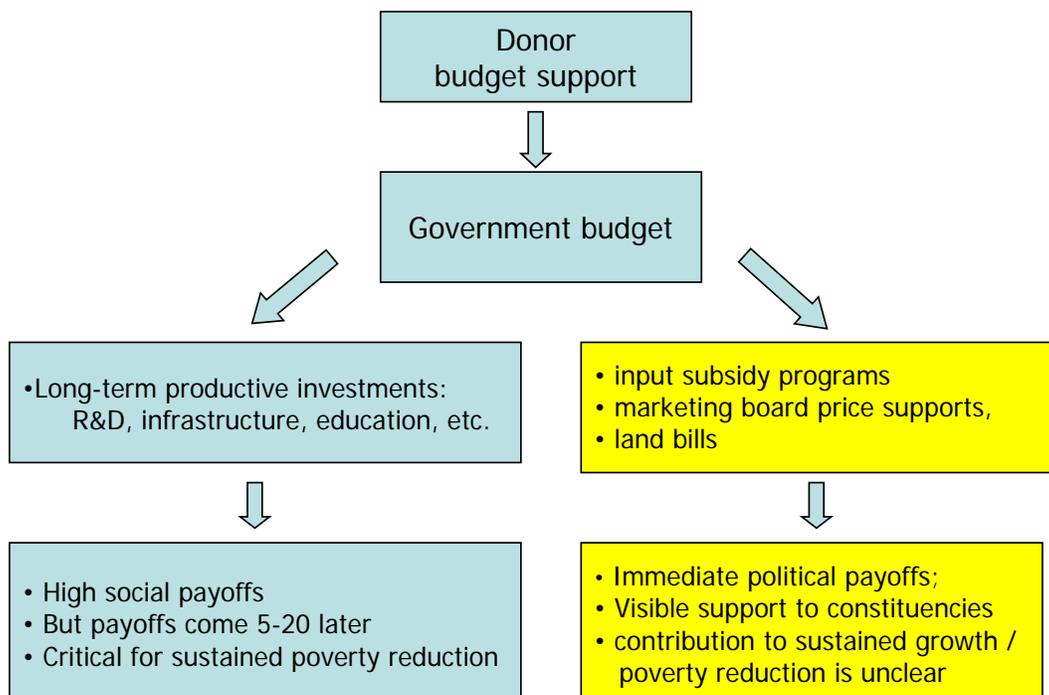"What are you complaining about? It's a level playing field."

Number of traders buying maize from farmers in village – 2009 Maize Value Chain Study

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

Infrastructure
2%

Irrigation Development
3%

Food Security Pack &
EDRP
12%

Personnel Emoluments
20%

Food Reserve Agency
Maize Marketing
15%

Operational funds
11%

Fertilizer Support Program
37%

Political economy of public resource allocation

Donor
budget support

Government budget

•Long-term productive investments:
R&D, infrastructure, education, etc.

• input subsidy programs
• marketing board price supports,
• land bills

• High social payoffs
• But payoffs come 5-20 later
• Critical for sustained poverty reduction

• Immediate political payoffs;
• Visible support to constituencies
• contribution to sustained growth /
poverty reduction is unclear

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
  - Policy predictability: Clear, rule-based public operations in markets
  - Credible commitment will enable more sophisticated risk management tools to come on line (e.g. warehouse receipt systems)
 - Greater transparency and consultation needed between private and public sectors

thank you

Fact #4

- Formal sector wages rising faster than food prices (1990-2007) in most of region – reversed in 2008/09
- 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
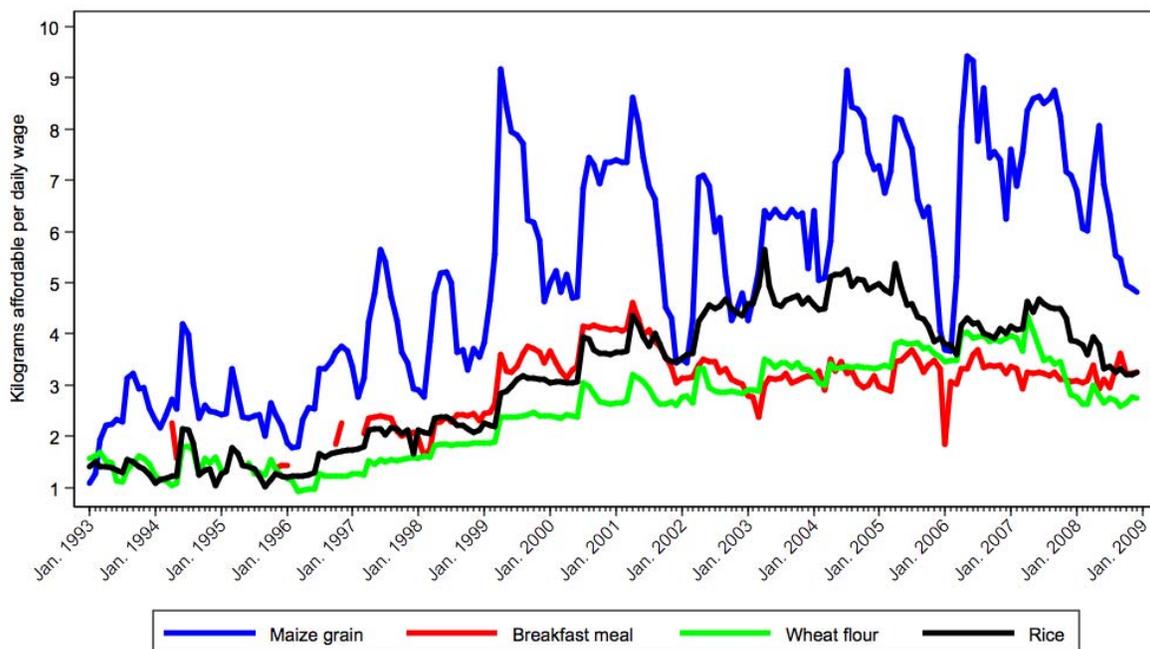
Obj. 1 Results - Kenya: Increases in maize and bread purchasing power until 07/08 food price crisis…
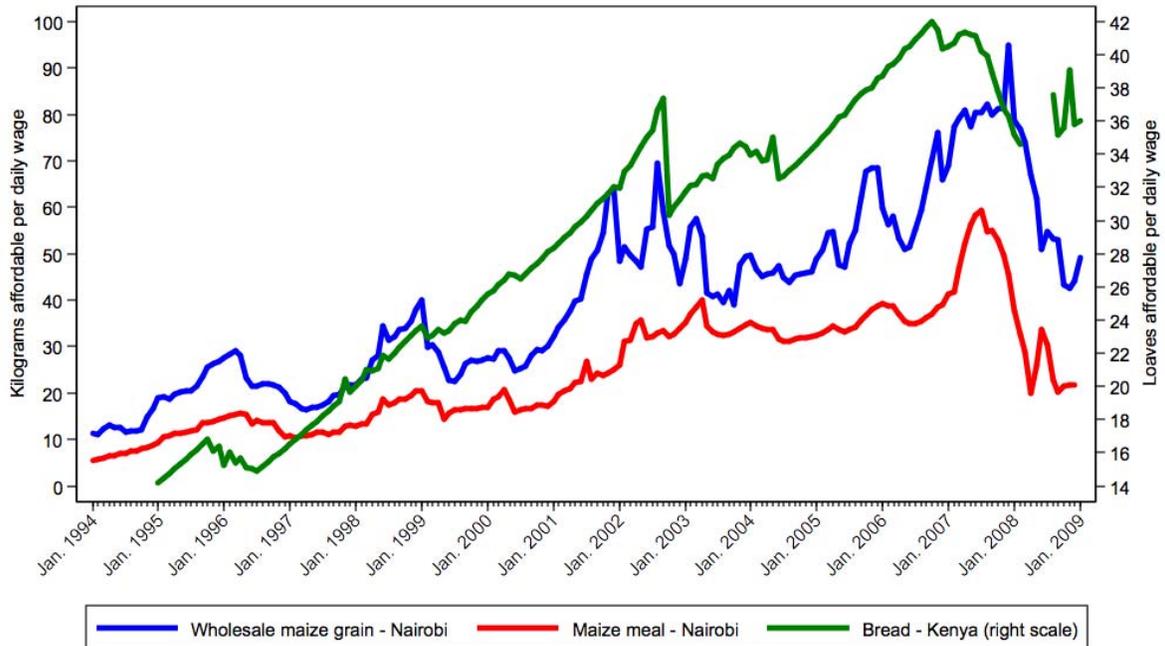
Obj. 1 Results - Lusaka: Increases in maize and bread purchasing power until 07/08 food price crisis…
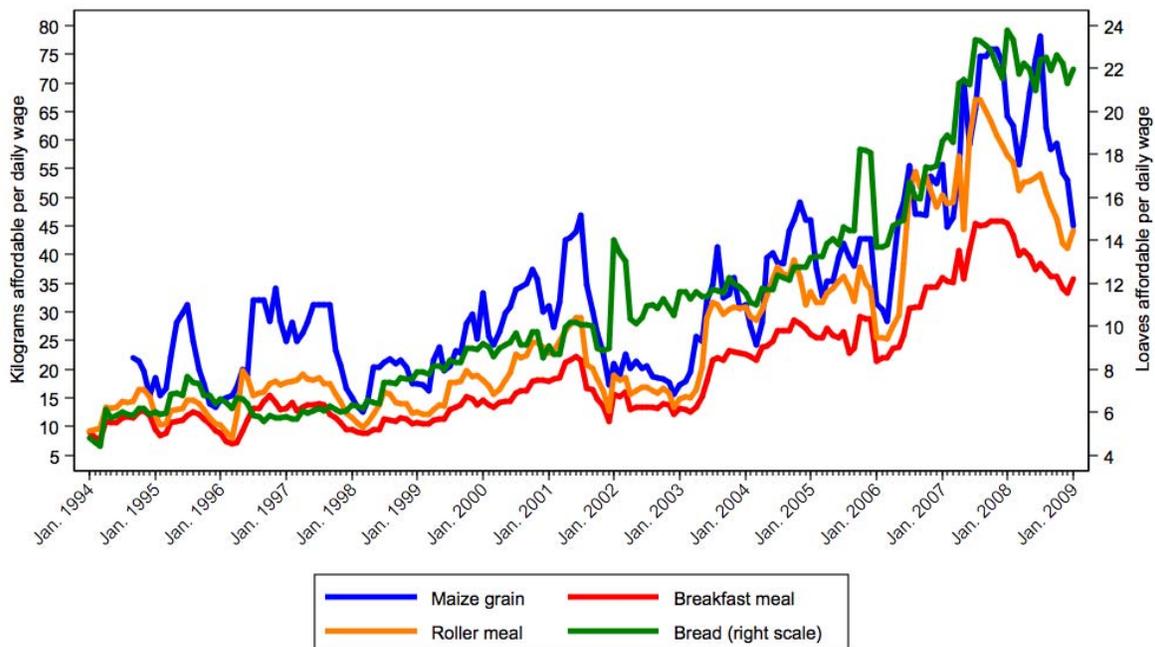
Obj. 1 Results - Maputo: Some increases over time in quantities affordable per daily minimum wage; rice and maize meal peaked before the 2007/8 food price crisis

Zambia	Total Income	Assets	Landholding size
Fertilizer source:	'000 kwacha per capita		ha per capita
Households not acquiring fertilizer:	266	173	.15
Cash purchases from private retailers:	774	342	.20
Government Fertilizer Support Program (50% subsidy)	804	425	.23

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

	Maize	Other grains/ beans/ oilseeds	Non-food cash crops	Fruits - vegs	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

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?
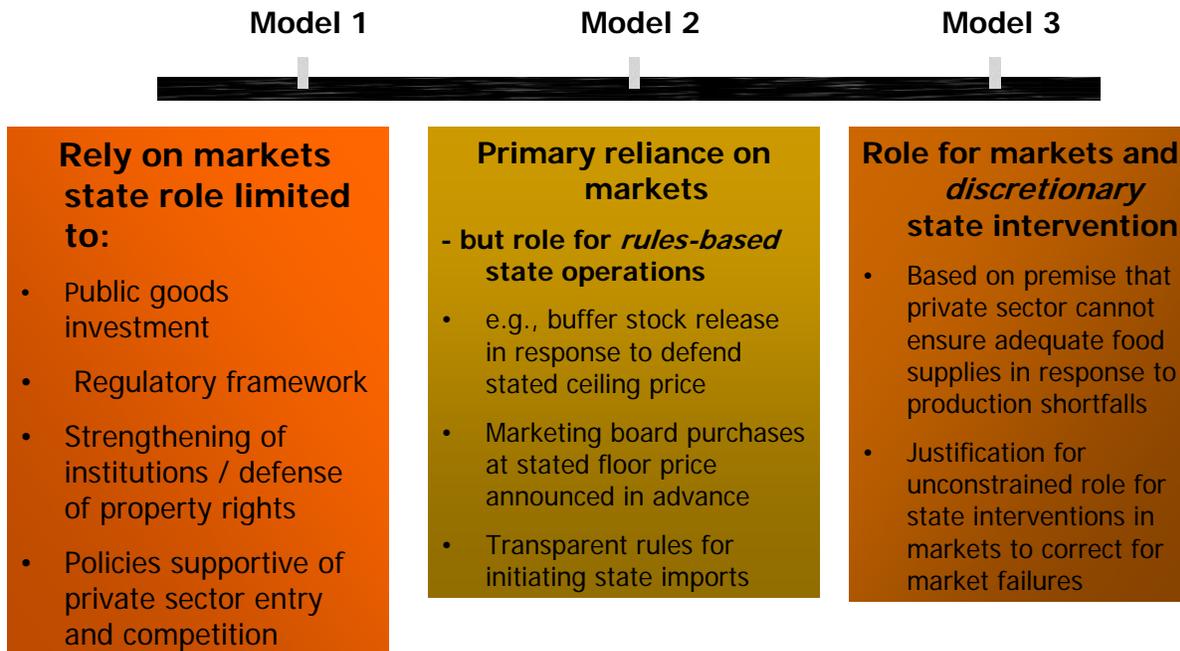
❑ Future of 'untied' budget support?

The Way Forward

It is useful to distinguish between:

- *"**first-order**"* marketing improvements – which are fundamental pre-conditions for farm productivity growth to occur – and

- *"**second-order**"* improvements, which will support small farmer productivity growth as long as the fundamental *first-order* issues are meaningfully addressed, but which will have only limited impacts if they are not.

The Way Forward (2)

❑ The fundamental ***first-order improvements*** revolve around <u>getting the critical middle stages of staple food value chains moving</u> – the wholesaling and processing stages.

- ▪ A competitive wholesaling stage of the value chain tends to **give rise to greater investment at the first-buyer** (assembly) stage who buy direct from farmers.

- ▪ Wholesalers are an **important source of financing** and contracting that enable assemblers to more aggressively compete for farm surpluses early in the season when prices are low.

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What is the right strategy?

❑ Poulton et al (2006) note that there is no credible government commitment to Model 1 (**full liberalization**), hence Model 2 (**markets with rule-based state operations**) is preferred

❑ However, questionable whether Model 2 could be perceived as credible either

❑ Many countries believe that when it comes to food security only self-sufficiency - not open borders - will offer the lasting solution.

❑ With low level of trust and commitment problems, Model 3 (**ad-hoc interventionism**) is likely to become the long-run equilibrium

❑ Model 3 has in fact become the dominant model among the main maize-producing countries in the region

Why does this happen?

- The "commitment problem"
  - The inability of parties to make a *credible commitment* to a course of action that would resolve a conflict
  - Governments need commitment that traders will import sufficient volumes at tolerable prices
  - Traders need a commitment from government not to take sudden, unanticipated actions that affect traders' bottom line
  - Government can't make a credible commitment to this effect
    - Rent seeking by individuals in government
    - Lack of trust that traders will import sufficient quantities

Retail sources of consumer staple food expenditures, Nairobi

Figure 17: Alternative Retail Channels and Levels of Use
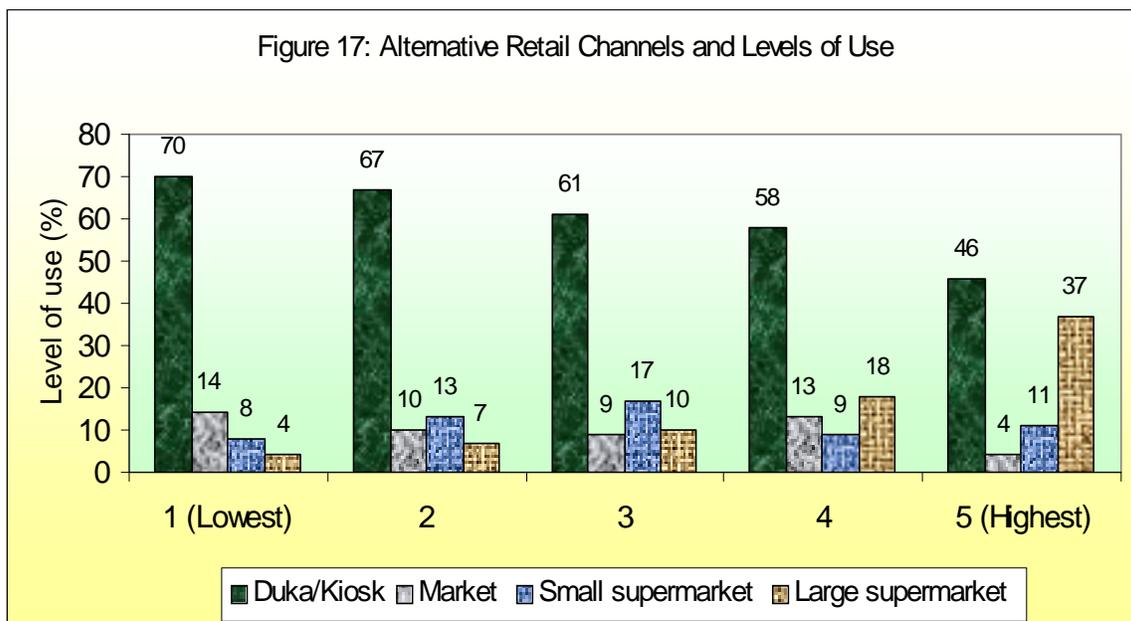
- Even with 20% annual growth of supermarkets, in relatively progressive Kenya, in 10 years, the supermarket share will be:

  12.4% market share in 2016.
- Therefore: priority must be on building up the traditional food marketing systems