KENYA'S MAIZE VALUE CHAIN:

TOWARD STRATEGIC INTERVENTIONS TO ADDRESS NATIONAL POLICY CHALLENGES

Lilian Kirimi, Nicholas Sitko,
T.S. Jayne, Francis Karin, Milu Muyanga,
Megan Sheahan, James Flock, Gilbert Bor

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TEGEMEO INSTITUTE OF AGRICULTURAL POLICY AND DEVELOPMENT

Kenya's 5 main food security and agricultural policy challenges

1. How to ensure high-enough food prices for farmers while ensuring low-enough prices for consumers
2. How to achieve faster growth in farm productivity
3. How to promote smallholders' access to markets
4. How to contain food price instability
5. (Less well recognized): how to achieve a smallholder-led development strategy in the face of shrinking farm sizes

Outline of presentation

1. Study methodology and data
2. Main findings as they relate to Kenya’s food security and agricultural policy challenges
3. Identify strategic interventions needed to achieve Kenya’s food security policy objectives

Methodological approach

1. Value chain analysis
   - Identify full range of functions required to bring a product/service from conception to end use
   - Interview agents at each stage to identify
     - The degree of competition at each stage
     - How behavior at one stage affects behavior at other stages
     - How actors respond to risks
     - Opportunities and constraints to growth

2. Descriptive analysis of farm household survey and value chain data

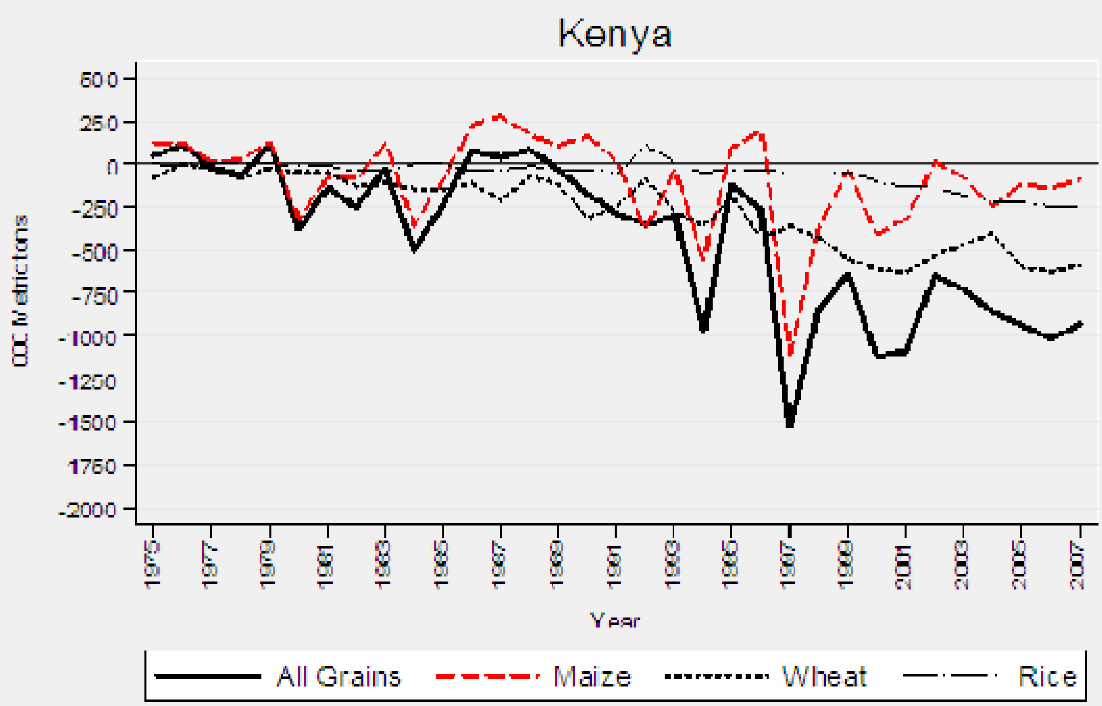
Data

1. 2009 MSU/Tegemeo value chain study
   - Covering 6 districts--Nakuru, Trans Nzoia, Kisii, Bomet, Bungoma & Machakos
   - 41 farmer FGDs (26 accessible; 15 inaccessible)
   - 534 households
   - 46 small traders
   - 36 medium-scale wholesalers
   - 6 small-scale millers
   - 8 large grain trading/processing firms
2. Tegemeo farm survey data: 4 waves, 10-year period
3. Maize production, consumption and price information from MoA & FAO

Main Findings

Finding 1: Widening staple food deficit

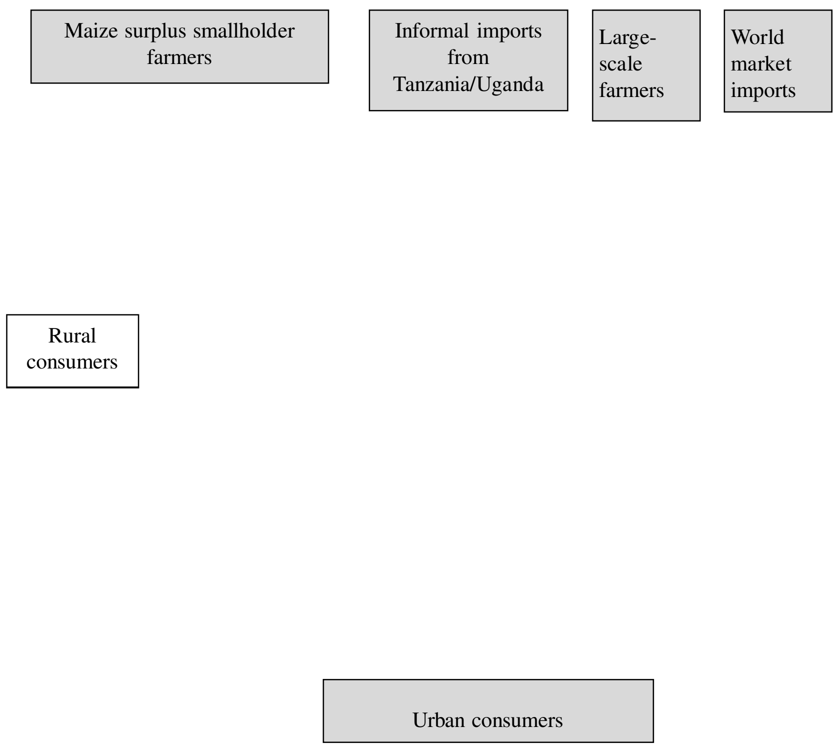
Widening staple food deficit: mainly resolved through wheat imports

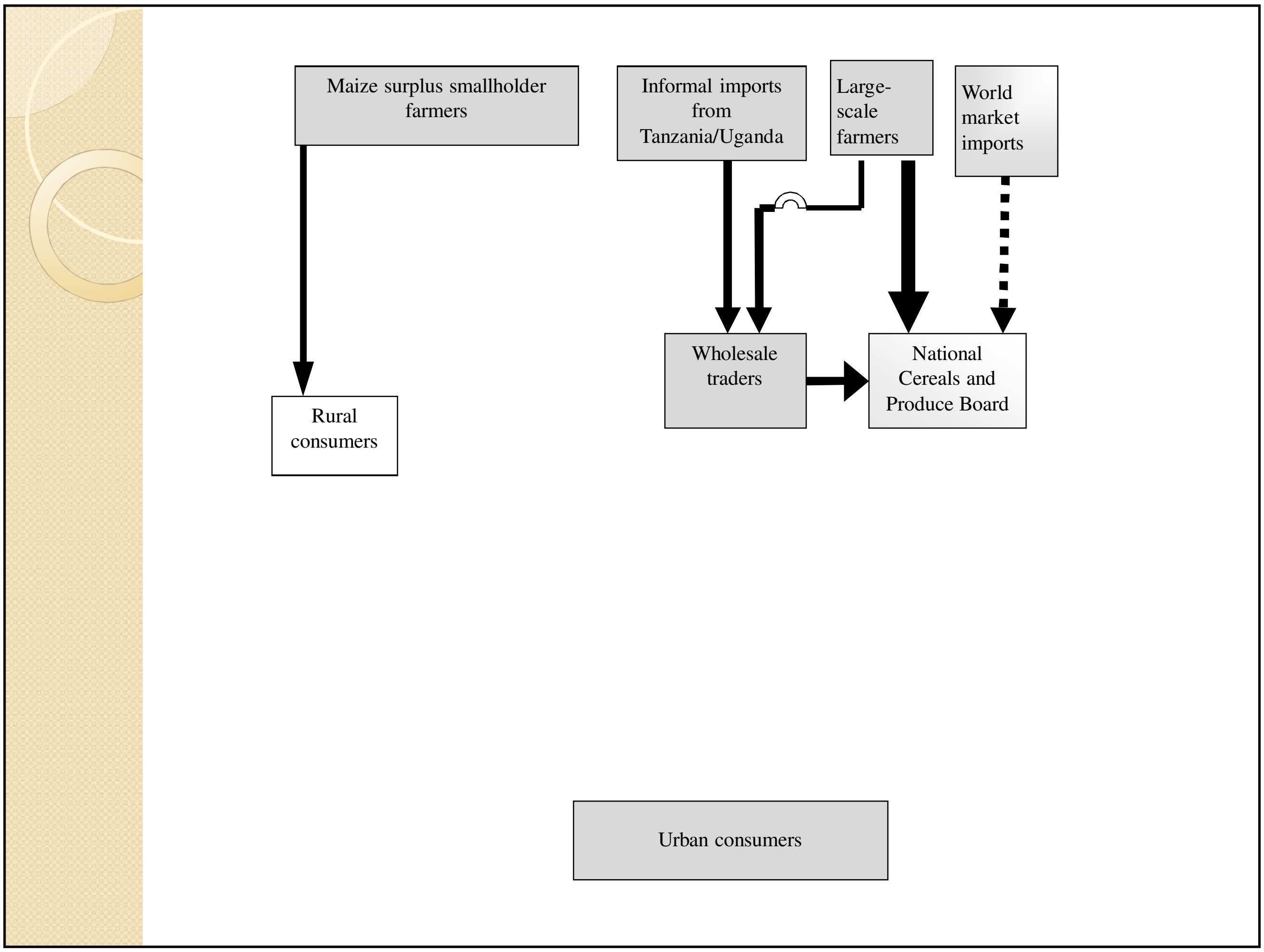


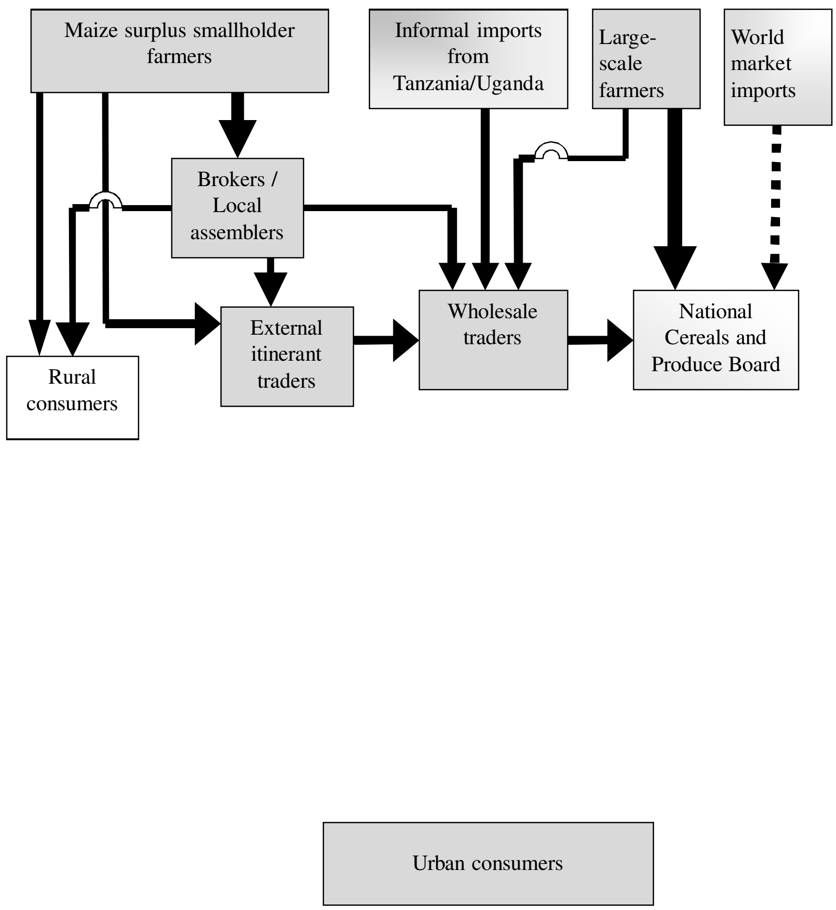
Source: FAOSTAT 2010

Finding 2: very complex maize marketing system

Maize marketing system




Maize surplus smallholder farmers
Informal imports from Tanzania/Uganda
Large-scale farmers
World market imports
Wholesale traders
National Cereals and Produce Board
Rural consumers
Urban consumers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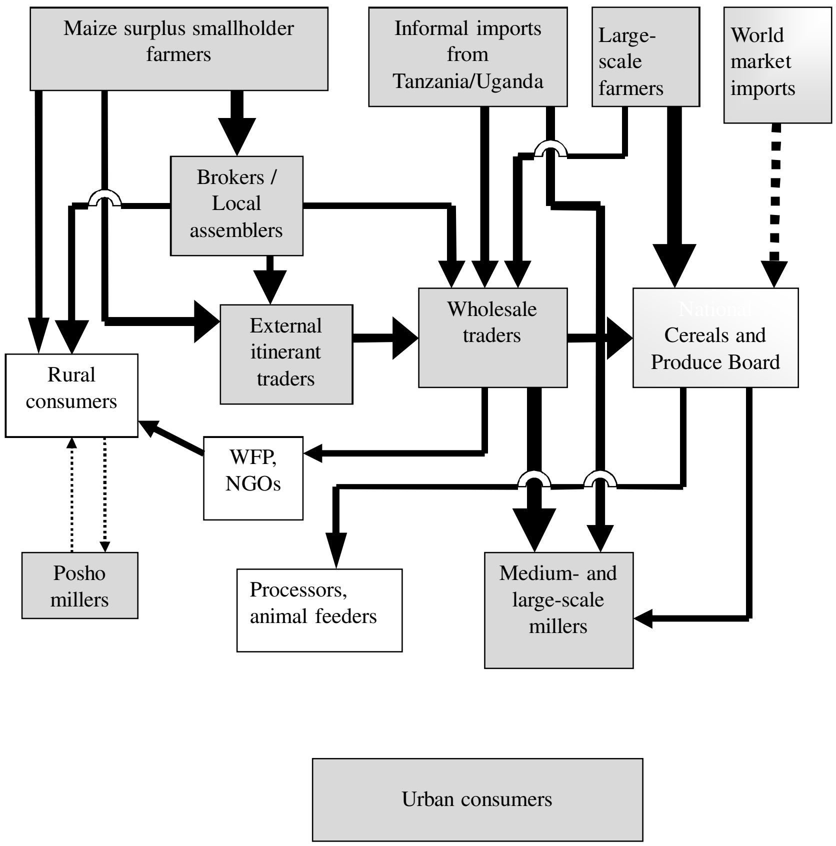
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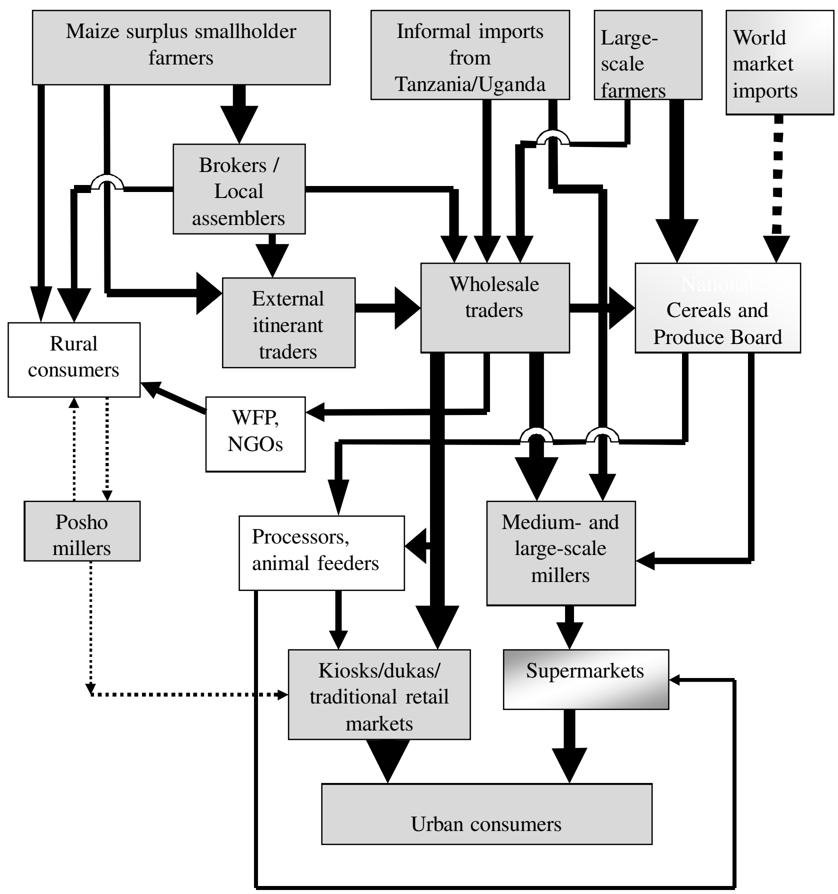
Rural consumers
WFP, NGOs
Posho millers
Processors, animal feeders
Medium- and large-scale millers
Urban consumers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Medium- and large-scale millers
Kiosks/dukas/ traditional retail markets
Supermarkets
Urban consumers

Marketing system

Appears to be very competitive at assembly, wholesaling, and retailing levels

Large-scale milling sector may be somewhat concentrated

Finding 3: farm structure of maize sales very concentrated

Extreme concentration of marketed maize output in Kenya's small-scale sector, 2006/07

	% of total sample						
Top 50% of maize sales							
Rest of maize sellers							
Farm hhs not selling maize							

Source: Tegemeo Institute / Egerton University rural household survey, 2007

Extreme concentration of marketed maize output in Kenya's small-scale sector, 2006/07

	% of total sample						
Top 50% of maize sales	2.1						
Rest of maize sellers	42.7						
Farm hhs not selling maize	55.2						

Source: Tegemeo Institute / Egerton University rural household survey, 2007

Extreme concentration of marketed maize output in Kenya's small-scale sector, 2006/07

	% of total sample	Farm size (acres)					
Top 50% of maize sales	2.1	15.4					
Rest of maize sellers	42.7	5.2					
Farm hhs not selling maize	55.2	3.3					

Source: Tegemeo Institute / Egerton University rural household survey, 2007

Extreme concentration of marketed maize output in Kenya's small-scale sector, 2006/07

	% of total sample	Farm size (acres)	Asset wealth ('000 ksh)				
Top 50% of maize sales	2.1	15.4	806				
Rest of maize sellers	42.7	5.2	65				
Farm hhs not selling maize	55.2	3.3	49				

Source: Tegemeo Institute / Egerton University rural household survey, 2007

Extreme concentration of marketed maize output in Kenya's small-scale sector, 2006/07

	% of total sample	Farm size (acres)	Asset wealth ('000 ksh)	Maize sales ('000 ksh)
Top 50% of maize sales	2.1	15.4	806	166
Rest of maize sellers	42.7	5.2	65	14
Farm hhs not selling maize	55.2	3.3	49	0

Source: Tegemeo Institute / Egerton University rural household survey, 2007

Extreme concentration of marketed maize output in Kenya's small-scale sector, 2006/07

	% of total sample	Farm size (acres)	Asset wealth ('000 ksh)	Maize sales ('000 ksh)	Gross value total crop sales ('000 ksh)		
Top 50% of maize sales	2.1	15.4	806	166	213		
Rest of maize sellers	42.7	5.2	65	14	58		
Farm hhs not selling maize	55.2	3.3	49	0	40		

Source: Tegemeo Institute / Egerton University rural household survey, 2007

Extreme concentration of marketed maize output in Kenya's small-scale sector, 2006/07

	% of total sample	Farm size (acres)	Asset wealth ('000 ksh)	Maize sales ('000 ksh)	Gross value total crop sales ('000 ksh)	Total income (crop+animal+off-farm, '000 Ksh)	
Top 50% of maize sales	2.1	15.4	806	166	213	584	
Rest of maize sellers	42.7	5.2	65	14	58	230	
Farm hhs not selling maize	55.2	3.3	49	0	40	166	

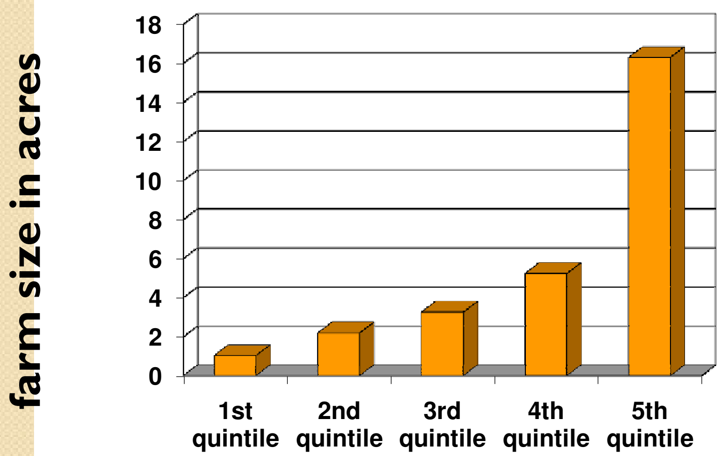
Source: Tegemeo Institute / Egerton University rural household survey, 2007

Extreme concentration of marketed maize output in Kenya's small-scale sector, 2006/07

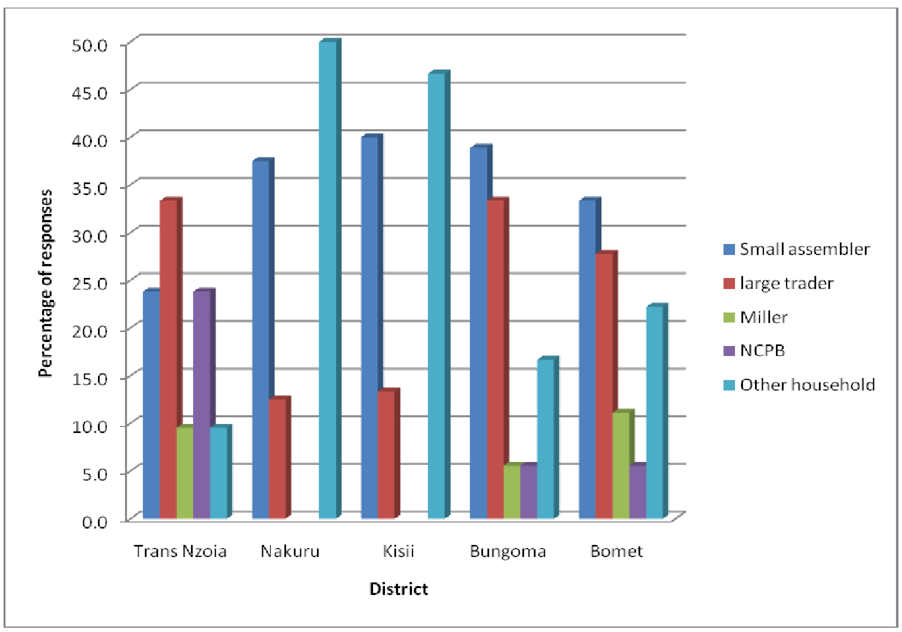
	% of total sample	Farm size (acres)	Asset wealth ('000 ksh)	Maize sales ('000 ksh)	Gross value total crop sales ('000 ksh)	Total income (crop+animal+off-farm, '000 Ksh)	% female headed
Top 50% of maize sales	2.1	15.4	806	166	213	584	7%
Rest of maize sellers	42.7	5.2	65	14	58	230	24%
Farm hhs not selling maize	55.2	3.3	49	0	40	166	37%

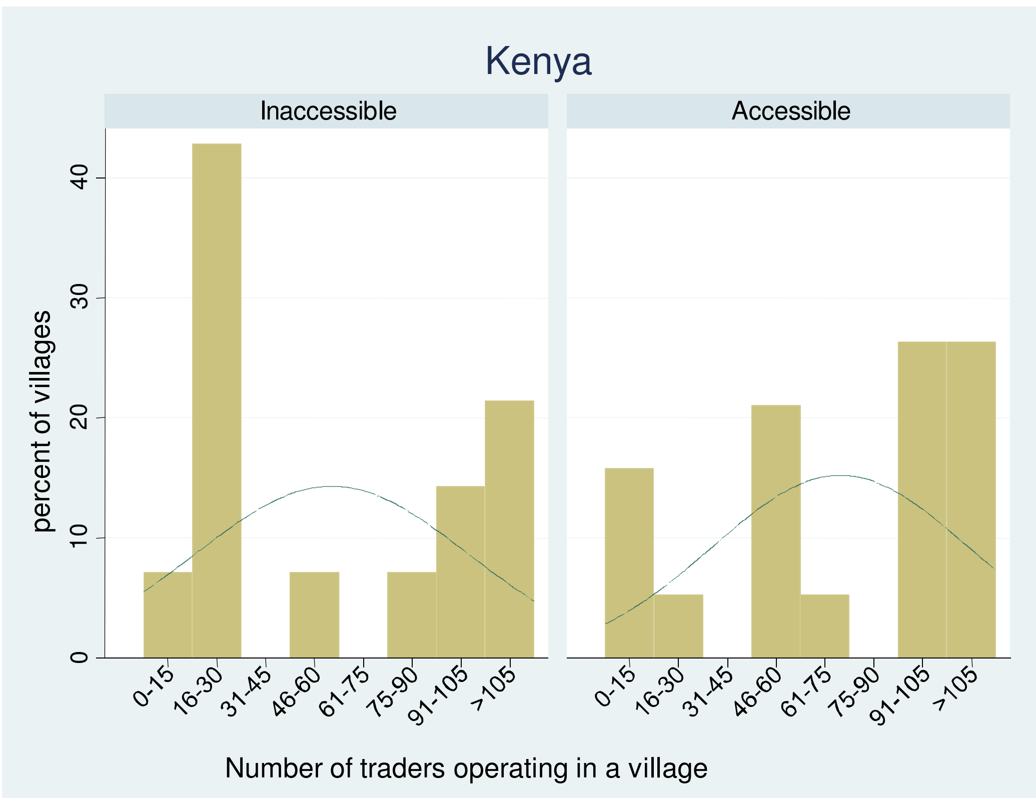
Source: Tegemeo Institute / Egerton University rural household survey, 2007

Most smallholder farms lack the land and other resources to produce a surplus



Finding 4: farmers in most villages have many sales options



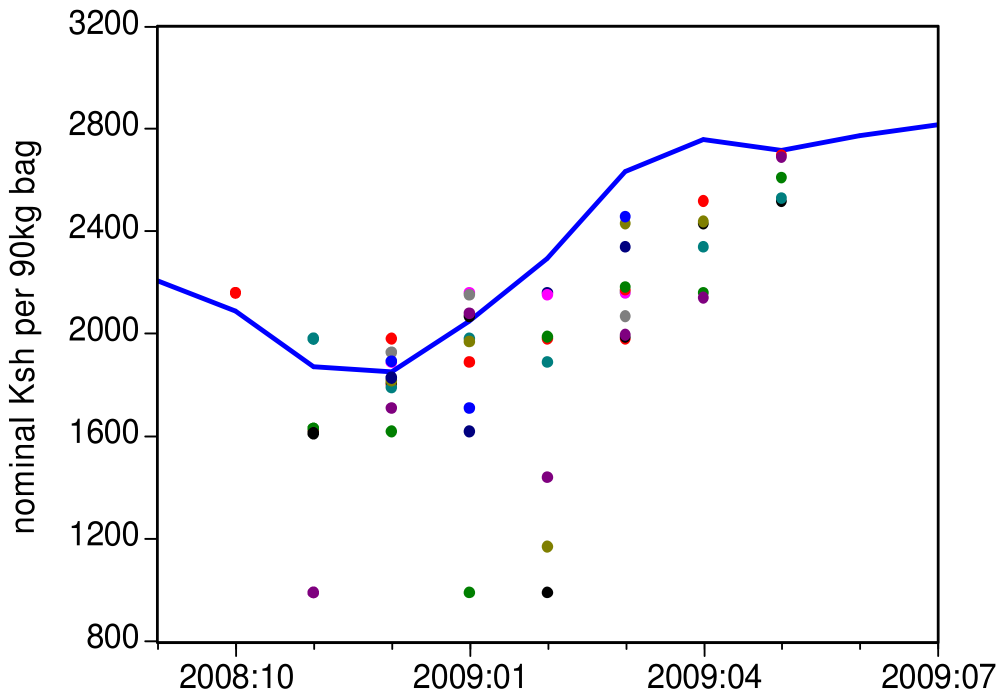

Kenya
Inaccessible
Accessible
percent of villages
0
10
20
30
40
0-15
16-30
31-45
46-60
61-75
75-90
91-105
>105
Number of traders operating in a village

Assembly traders

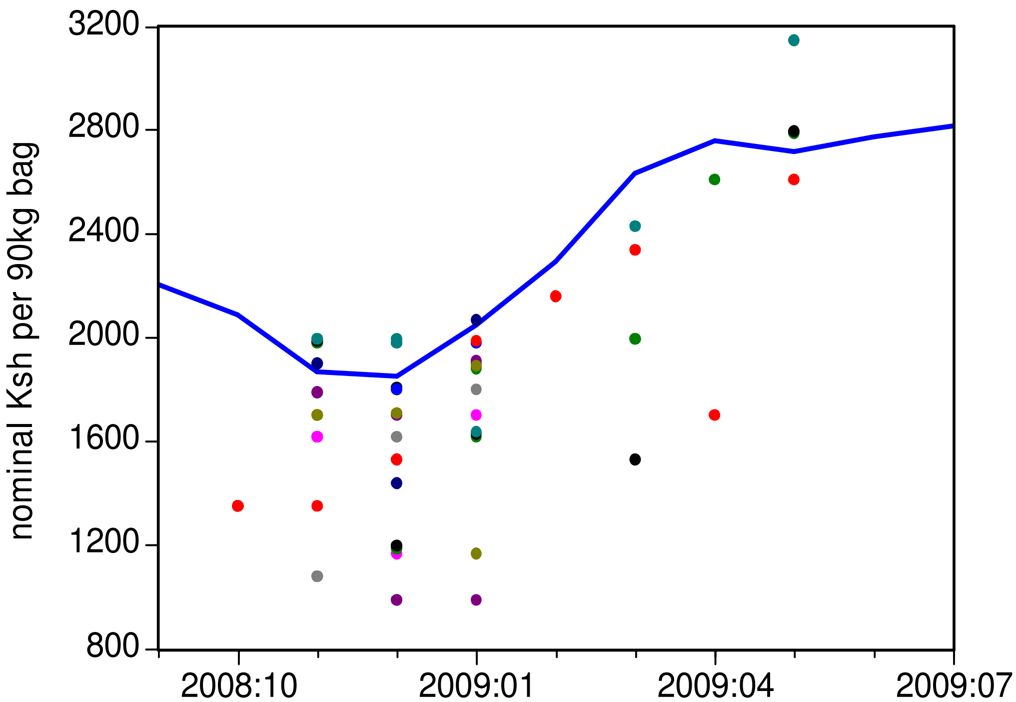
- Most important outlet is small traders: 73.1% farmers sell maize at farm-gate
- Very easy entry – high degree of competition
- Most start out as surplus-producing farmers
- Quick turnaround sales (farmers to wholesalers)
- Limited storage
  - Outflow of grain early in season & subsequent backflow
  - Redundant transport costs and higher maize/meal prices
  - Working capital constraints
- Little concern with maize moisture content
  - Downstream problems for millers & consumers (increased marketing costs, food safety)

Finding 5: most but not all farmers get >75% of wholesale price

Farm-gate prices in accessible villages in Trans Nzoia vs. wholesale Eldoret

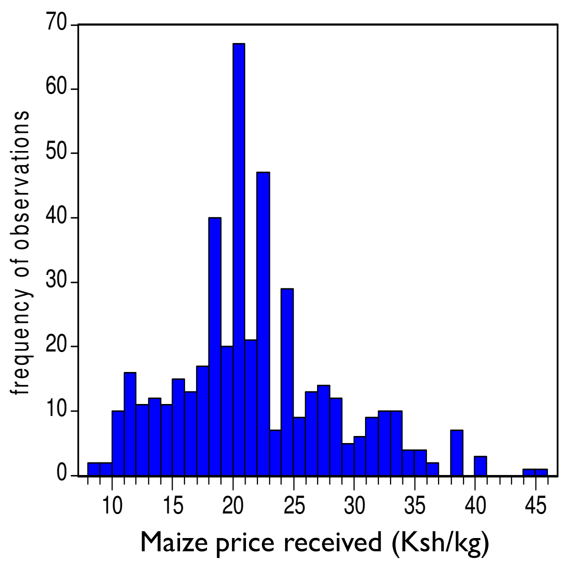


Farm-gate prices in inaccessible villages in Trans Nzoia vs. wholesale Eldoret



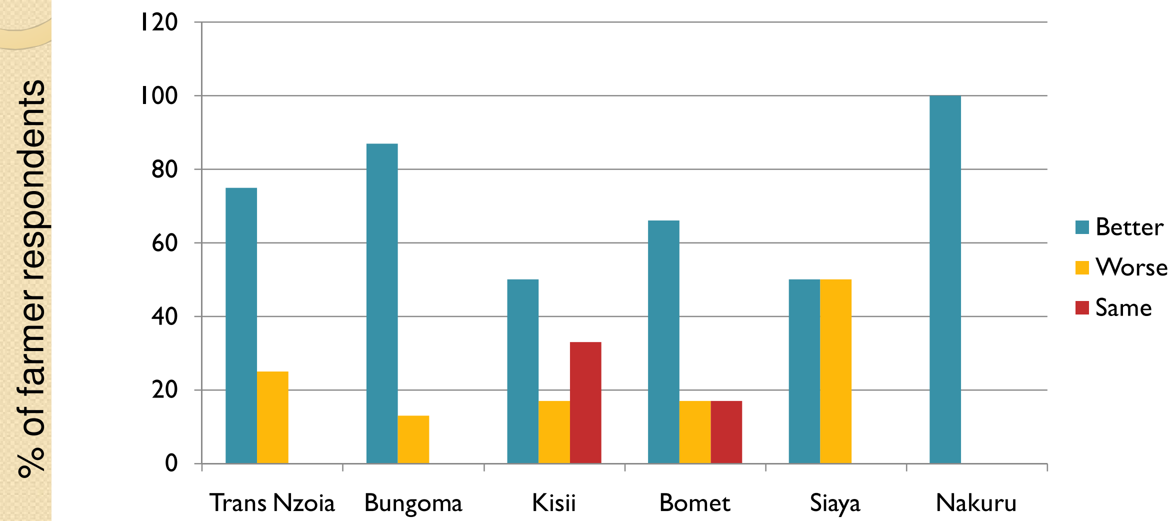
Maize price variation in same district/month of sale

Frequency of maize prices received by farmers in Trans Nzoia District in May 2009



Perhaps depends on ability to negotiate a good price & hold onto grain

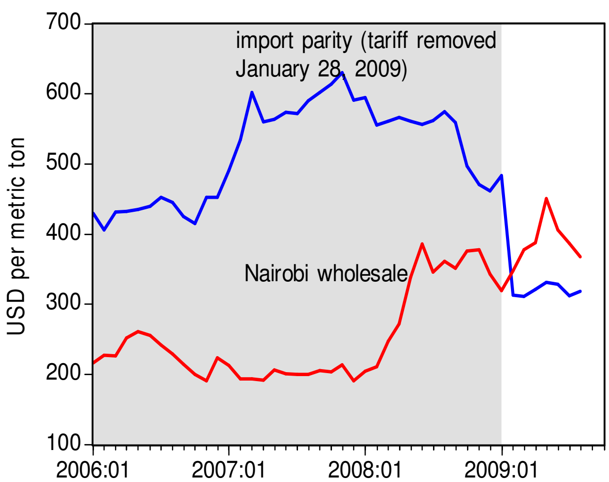
Finding 6: most farm households state the marketing system has improved over past 10 years

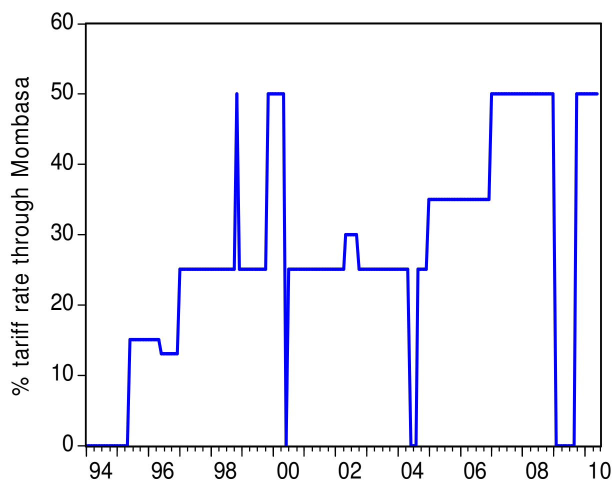


Finding 7: relatively little farmer or trader storage

- Only 13% hhs store maize for more than 4 months for purposes of selling later in season
- 59% of assemblers don't store purchased grain
  - Average stock stored for at least 4 months is 56.3%
- Depletion of maize in local markets early in the season with food security implications
- Reasons for limited storage
  - Working capital constraints
  - Seasonal price increases may not cover storage costs
  - NCPB's pan-seasonal pricing
  - Steps sometimes taken late in season to reduce maize prices, e.g., waiving import tariff
  - Wet maize in system – increases traders' and millers' storage losses, aflatoxin problems

Finding 8: unpredictable tariff rate changes are worsening price volatility



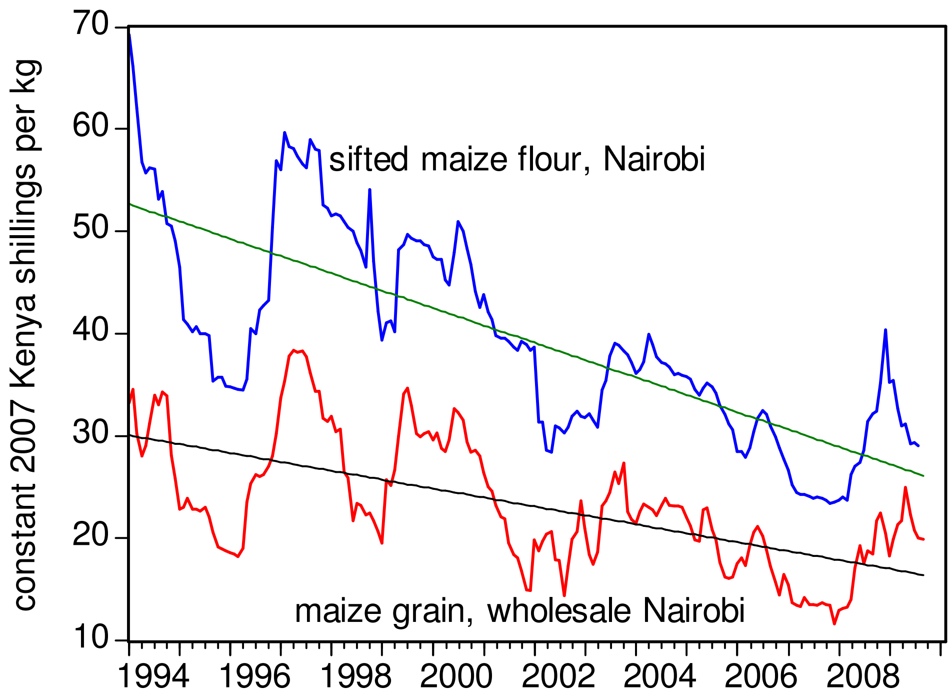


Finding 9: liberalization has brought competition to milling industry and benefitted consumers

Consumer benefits

- Access to cheaper and more nutritious posho meal
- Reduced prices for sifted flour
- Good for urban consumers where maize is primary staple for low income groups (first three quintiles)
  - Kiosks, dukas, small shops are primary source of urban consumers' maize meal purchases
  - Supermarkets share very small except for wealthy

Retail maize meal prices trending downward



Summary of main findings

1. Majority of households/farmers are maize net-buyers
2. Maize sales from small-scale sector are concentrated among a small % of farmers
3. Farmers have many buyers to choose from – highly competitive
4. Most farmers receive > 75% of wholesale price; but major variability across households in the price they receive
5. Distance traveled from farm to point of maize sale is very low: good market access
6. Most households indicate that the grain marketing conditions have improved over past 10 years

Summary of main findings (2)

7. Apparent under-provision of seasonal storage
   - Not due to inadequate facilities
   - Rather due to high risks to storage
   - Banks wary to lend for grain storage
8. Consumers vulnerable to high degree of price instability
   - Reduces incentives of farm households to diversify to higher-valued crops
   - Exacerbated by import tariff unpredictability

Proposed public sector actions

1. Rethink seriously about further land fragmentation
2. Improve maize productivity to enable a surplus
3. Charge cess on grain transport once – crack down on corruption at district borders/road blocks
4. Support milling industry to enforce maize grading, which will ultimately encourage farmers to pay greater attention to quality standards
5. Set transparent conditions for triggering change in import tariff rate

Proposed public sector actions (2)

5. Markets will develop more rapidly if production surpluses can be increased, hence:
   - Greater support to NARLs for generating improved varieties
   - Support programs that work with farmers to improve their crop husbandry and marketing skills
     - farmers who got training received 8% higher prices in 2009 than farmers in adjacent villages not receiving training
6. Invest in rural feeder road infrastructure
7. Rehabilitate Kenya railways

Thank you