Agricultural Data and Policy Implications in Zambia

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Outline of Presentation

1. Background
2. Review of data sources
3. What do these data tell us about rural poverty and public spending?
4. Understanding high maize meal prices in Zambia
5. Conclusion

Background: Who are we?

- Indaba Agricultural Policy Research Institute (IAPRI)
  - Zambia's first institute dedicated to agricultural policy research and advocacy
  - Emerged from USAID-funded Food Security Research Project (FSRP)
  - IAPRI core funding from USAID and SIDA
  - Links empirical evidence to pro-poor policy reform in the agricultural sector

Data Sources

- Zambia has a long-term commitment to generating robust data:
  - Surveys focus on “smallholder” households (hh): Defined as cultivating >0 and <20 ha.
  - These include:
    - Annual Crop Forecast Survey (CFS)
    - Annual Post-Harvest Survey (PHS)
  - These surveys exclude important livelihoods variables

Data Sources

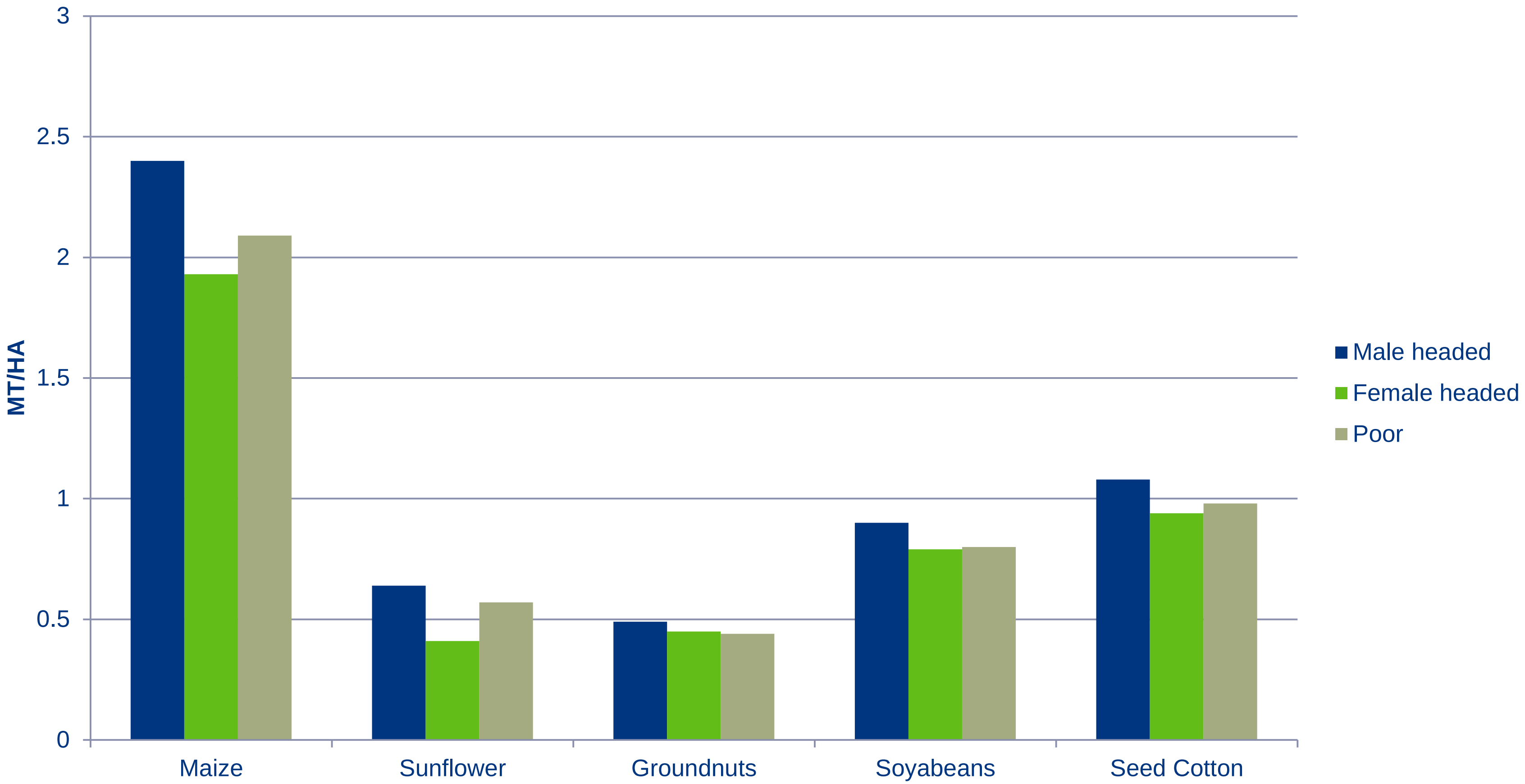
- Supplement to the Post-Harvest (SS)
  - Three wave panel survey (2001, 2004, 2008)
  - ~5000 HH
  - Nationally representative
  - Provides important livelihoods data not captured in normal agricultural statistics:
    - HH income, demographics, marketing, land ownership

Data Sources

- Rural Agricultural Livelihoods Survey 2012 (RALS)
  - >8,000 smallholder hhs
  - Nationally representative
  - First wave of new panel following 2010 Census
  - Like the SS provides unique rural livelihoods data:
    - The survey captures crop and hh member level data related to all farm and off-farm activities

Example of analysis from RALS

Average yield (MT/Ha) by crop by sex of hh head, 2012



Source: RALS 2012

Unique Attributes of the RALS

- HH member-level disaggregation of farm production practices, marketing, and off-farm income:
  - Enables gender disaggregated analysis

- USAID/FtF anthropometric and women's empowerment data collected on RALS hhs in Eastern Province
  - Enables analysis of livelihoods data to anthropometric outcomes

What can all these data tell us?

- To advocate for pro-poor policy we must understand the characteristics of rural poverty and their relationships to Zambian agricultural policies

Understanding rural poverty in Zambia

Per Capita Gross Income in US$, 2011-12				
Province	Mean	Median	Percentile 25	Percentile 75
Central	455	224	111	451
Copperbelt	568	224	118	460
Eastern	390	217	119	388
Luapula	664	286	159	514
Lusaka	1352	320	122	816
Muchinga	447	212	111	474
Northern	469	315	185	548
NorthWestern	442	203	115	421
Southern	694	203	109	424
Western	302	163	77	320
Zambia	514	231	120	449

Source: RALS 2012

Understanding rural poverty in Zambia

Average per capita income among smallholder households by sex of hh head

	Mean	25th percentile	Median	75th percentile
Sex of Household Head				
Male	882.05	126.76	238.98	455.10
Female	413.83	90.69	174.97	362.79
Child-headed	387.57	196.45	196.45	271.91
All households	741.35	120.04	230.87	448.67

Source: RALS 2012

Understanding rural poverty in Zambia

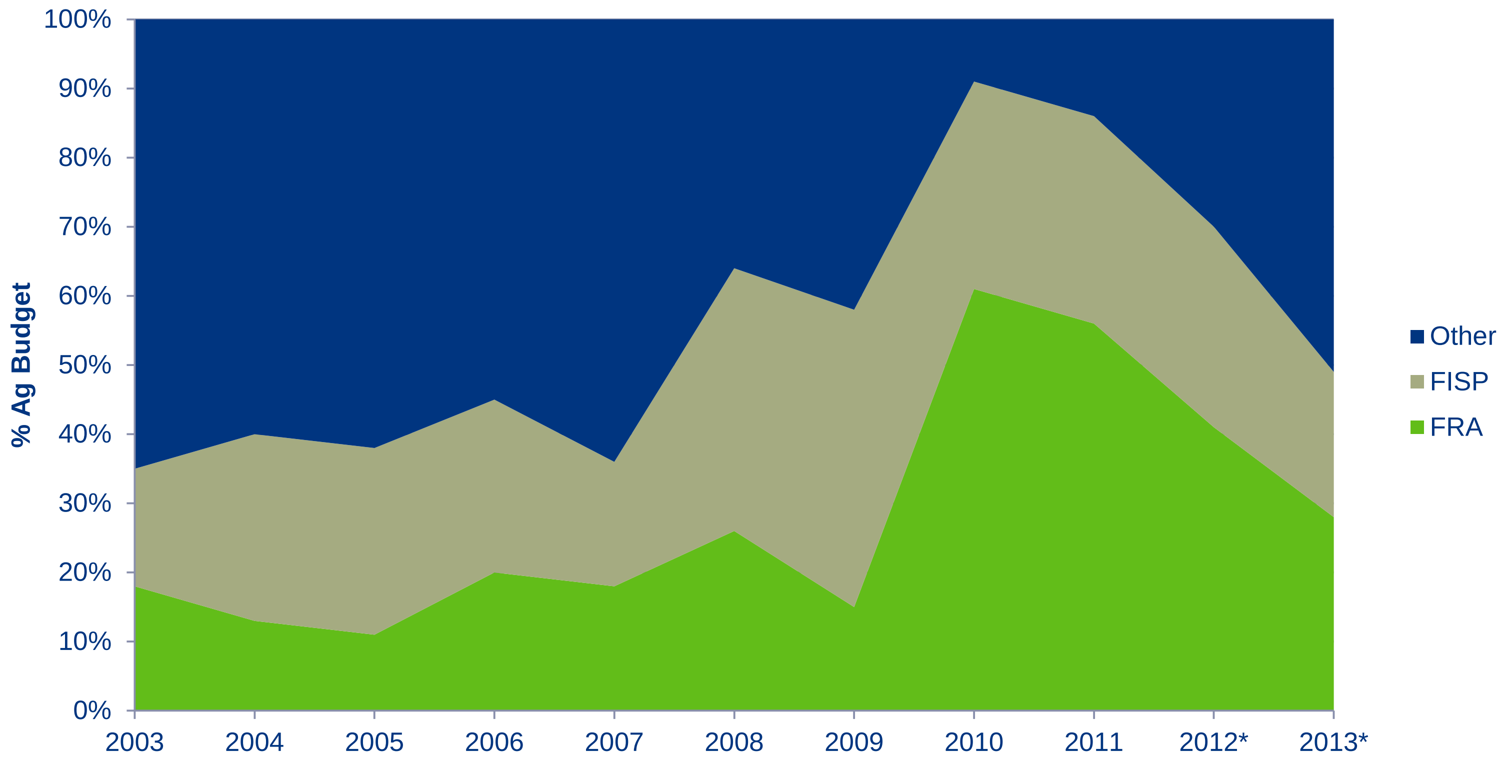
Land Size and Poverty in Zambia, 2011/12

Total area cultivated	Number of farms	% of farms	Poverty Rate (%)
	(A)	(B)	(C)
0-0.99 ha	596,334	39.60%	81%
1-1.99 ha	499,026	33.10%	81%
2-4.99 ha	354,116	23.50%	66%
5-9.99 ha	49,410	3.30%	38%
10-20 ha	6,999	0.50%	15%
Total	1,505,885	100%	76%

Source: RALS 2012

Understanding rural poverty in Zambia

Percentage share of FISP/FSP and FRA of the total MAL budget, 2003-2011



* Note: 2012 and 2013 are budget allocations, actual spending likely varies

Understanding rural poverty in Zambia

Total area cultivated	Number of farms	% of farms	Poverty Rate (%)	% of farmers receiving FISP fertilizer	kg of FISP fertilizer received per farm household	% of farmers expecting to sell maize	Expected maize sales (kg/hh)
	(A)	(B)	(C)	(D)	(E)	(G)	(H)
0-0.99 ha	596,334	39.6	81	14	24.1	22.2	135
1-1.99 ha	499,026	33.1	81	31	69.3	47.7	609
2-4.99 ha	354,116	23.5	66	45	139.7	64	1,729
5-9.99 ha	49,410	3.3	38	59	309.7	82.1	6,613
10-20 ha	6,999	0.5	15	53	345.6	86.8	15,144
Total	1,505,885	100	76	29	77.1	42.7	950

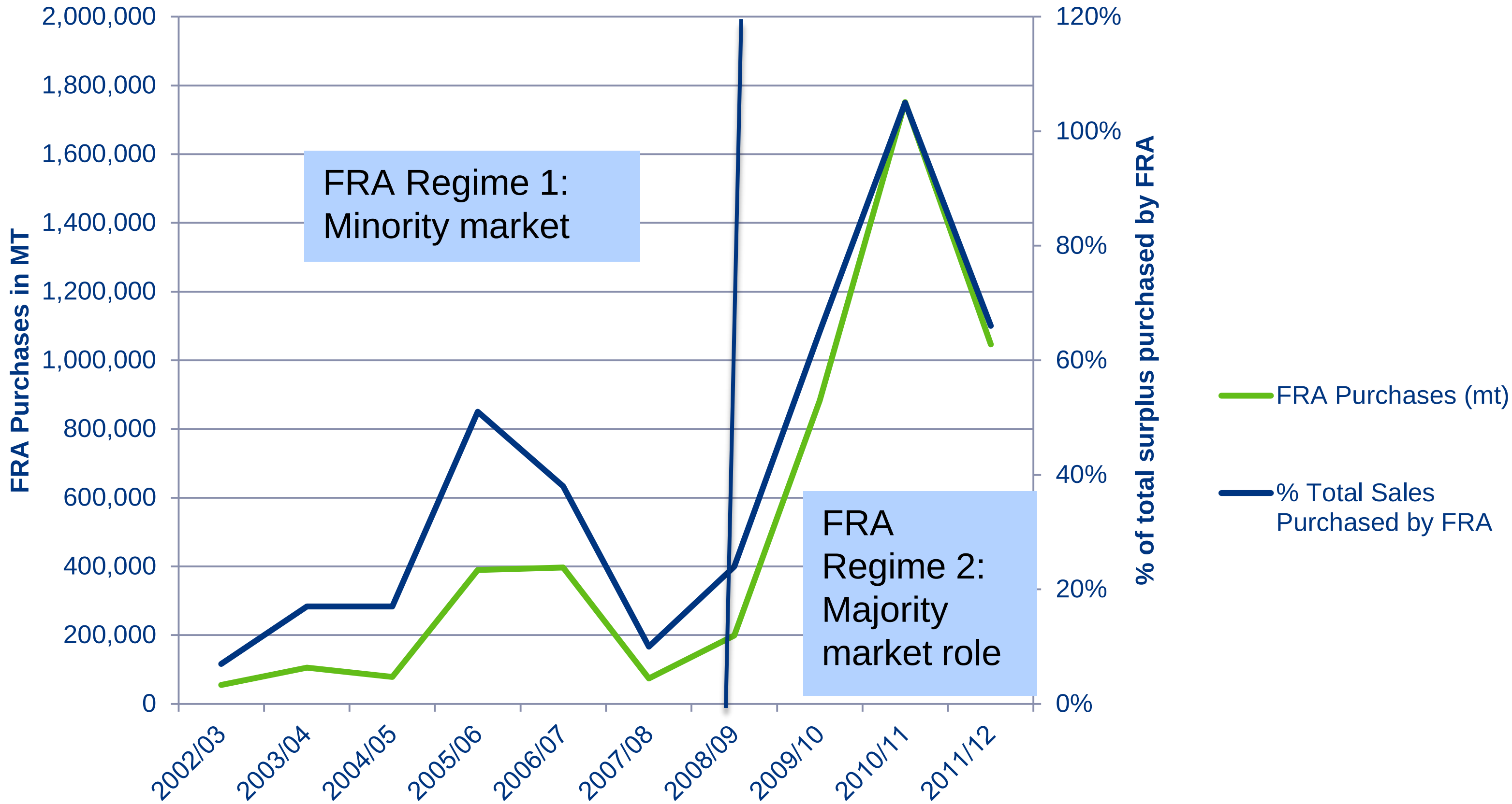
Source: RALS 2012

Summary of Policy Impacts on Rural Poverty

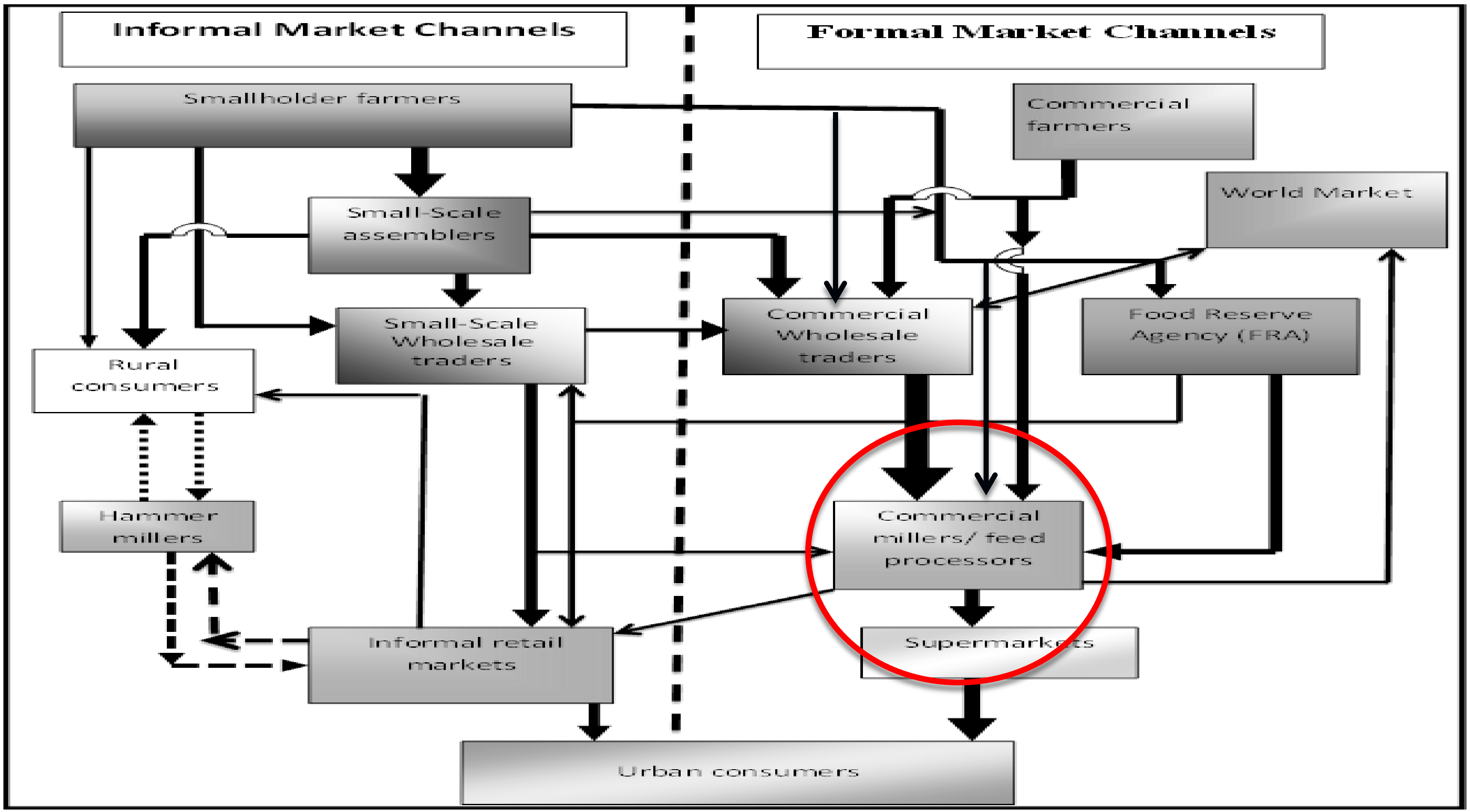
- Current public spending focus on maize input and output subsidies:
  - Disproportionately captured by larger, already better-off farmers
    - May help to explain why spending increases on agriculture have not led to a decline in rural poverty
  - Comes at a major opportunity cost to investment in public goods
  - Output market subsidies through the FRA may also be implicated in high maize meal prices since November 2012

High maize meal prices and changing maize market

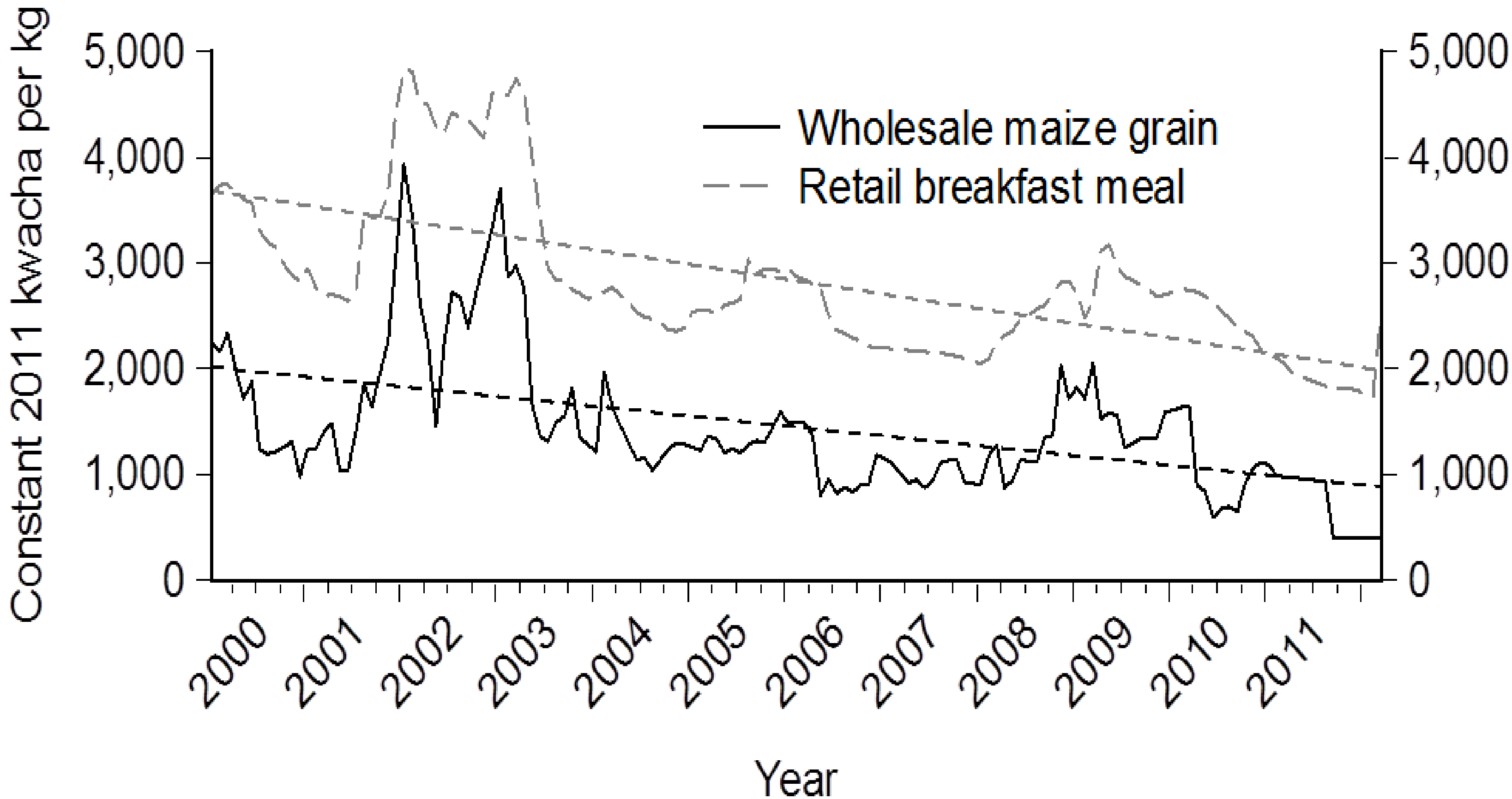
Maize Sales and FRA Purchases in Zambia (2002/03 to 2011/12)



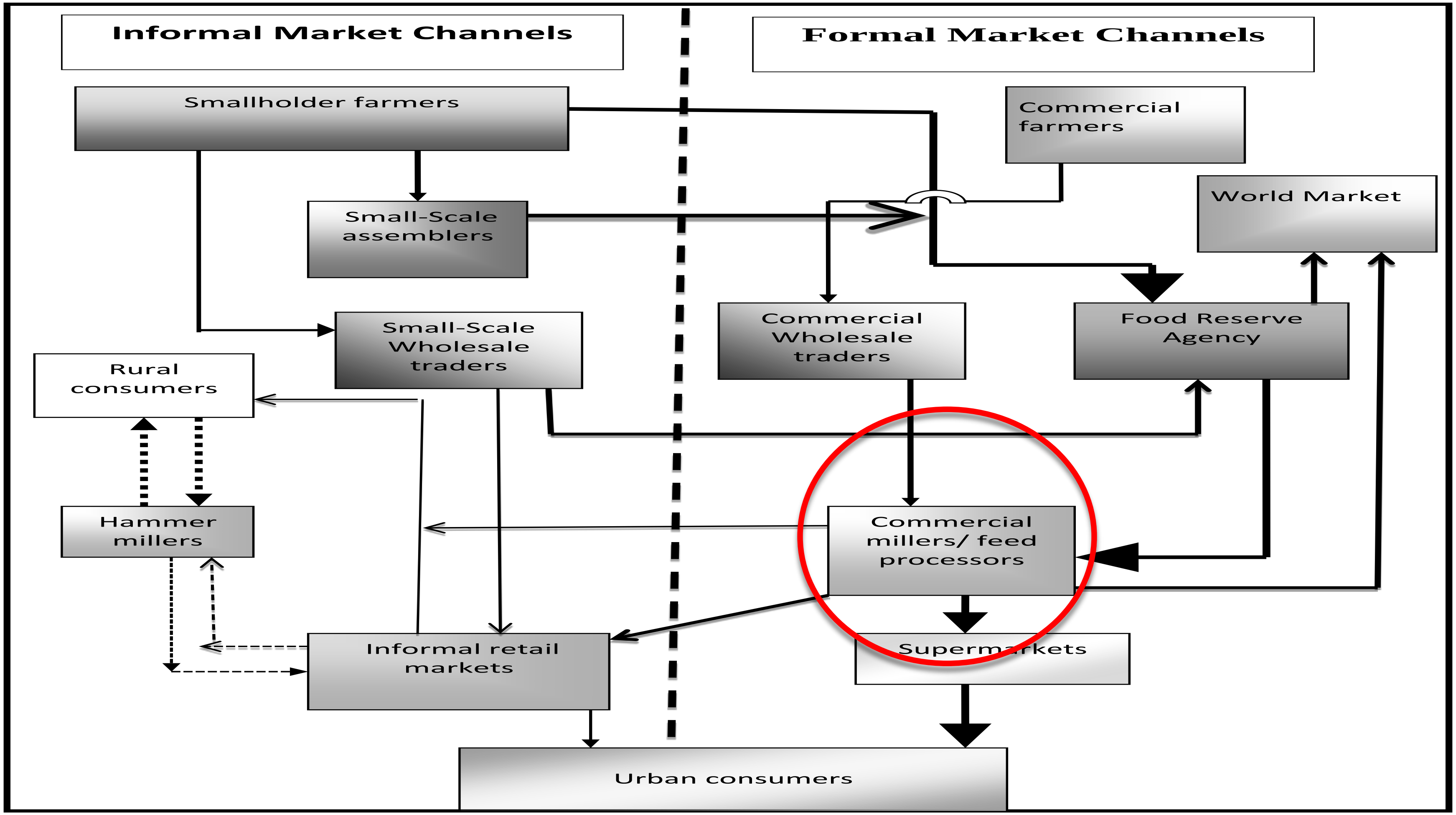
Organization of Zambia's Maize Market under FRA Regime 1



Outcome of Regime 1



Zambia's Maize Market Structure under FRA Regime 2

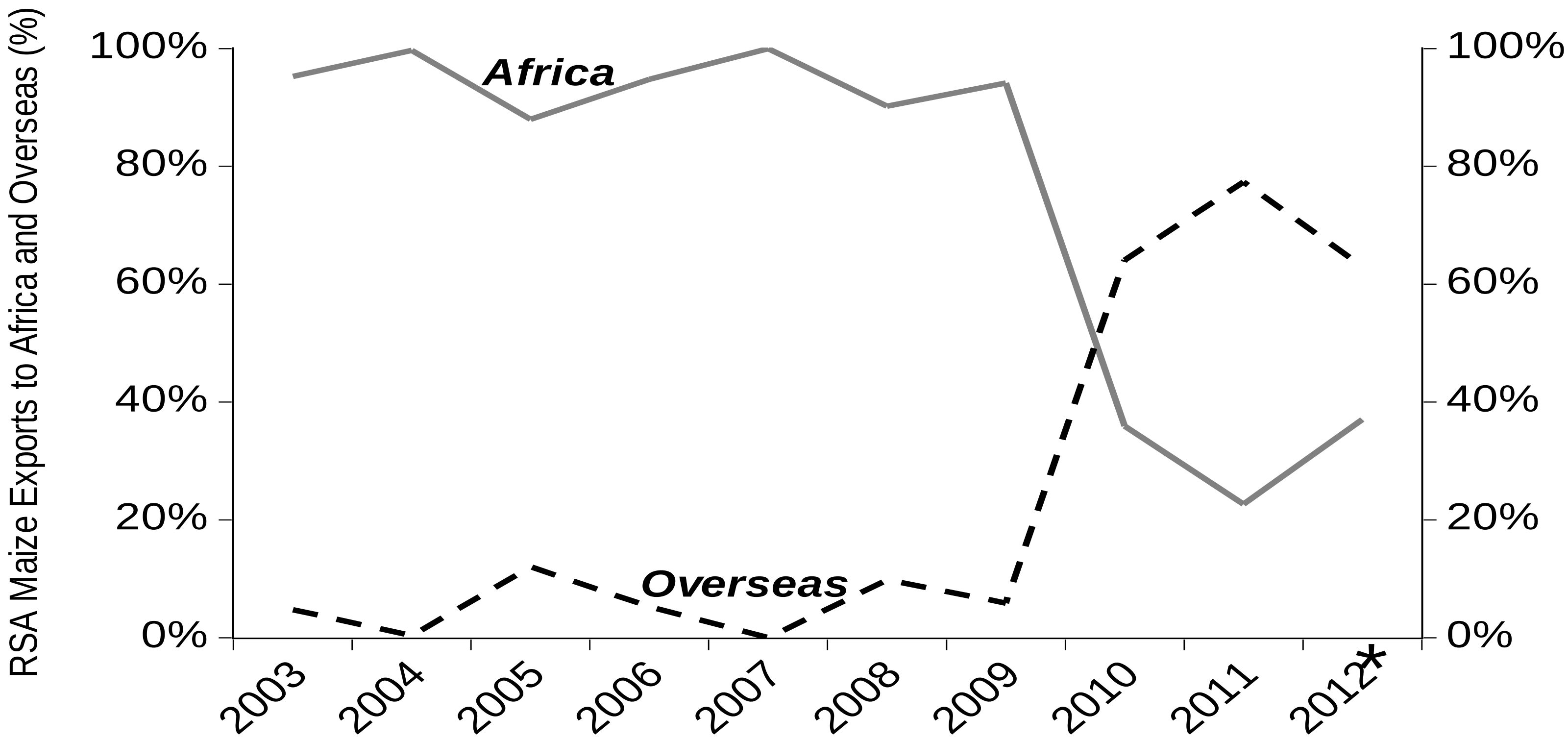


Overall Effect on Market

- Less competition in the market
- Greater uncertainty over prices
- Greater advocacy power by millers
- Less overall maize supplies than would have been the case otherwise
- Elevated risk of supply bottlenecks around FRA depots
- Decreased market flexibility and greater vulnerability to unanticipated changes in supply and demand

Structural Shift in South African Trade

Trends of South Africa's White Maize Grain Exports to Africa and Overseas



*2012 (28 Apr 2012 - 8 Mar 2013)

Summary

- High regional demand coupled with extensive interventions in the market contribute to elevated maize meal prices despite high production levels
- High wholesale prices should be viewed as a positive development for surplus maize producers
  - However, trade restrictions and FRA procurement limit this effect
    - Commercial farms willing to return to market under more predictable circumstances
    - Smallholder response limited by delayed payments from FRA and uncertainty over input access

Conclusion

- Current agricultural development approach in Zambia is not yielding optimal outcomes:
  - Stagnant rural poverty and widening income gap
  - Stagnant yields
  - High food prices
- A redirection of spending is critical
  - Policy-makers must begin to make use of the wealth of empirical data they have to make policy decisions

Ways forward

- Regional demand likely to remain high in the medium-term:
  - Opportunity to redirect spending toward more pro-poor spending, without undermining producer prices
  - Private-sector wholesalers willing to move toward maize contracts if trade is freed
    - Can hedge positions on SAFEX or better yet on ZAMACE
    - Cargill example

Ways forward

- Yet current signals are worrying:
  - Increased spending on FRA
  - Significant spending on new public grain silos
  - Revamping of Nitrogen Company of Zambia (NCZ)
  - Continued capacity of MAL to unilaterally impose trade restrictions
    - Unwilling to support Agricultural Marketing Act
- If Zambia wants to use agriculture as a growth engine and become the breadbasket of the region a new policy approach must be pursued.

Key recommendations

- Encourage the passage of the Agricultural Marketing Act:
  - Unilateral capacity to impose import and export bans must be limited in order to encourage investment in agricultural markets
- Revise FRA Act to limit its market function:
  - Should return to being a strategic reserve
  - Can manage strategic reserves in alternative ways
- Encourage the adoption of the e-voucher for input distribution:
  - This should be in areas with sufficient private sector capacity- NOT PAN-TERRITORIAL
  - Need clarification from government on how market an e-voucher and NCZ can co-exist

Key recommendations

- Cost savings from limited FRA and greater reliance on private sector to handle input subsides can create budget space to:
  - Expand and improve extension service
  - Develop improved seed varieties and farm and animal husbandry practices
  - Invest in testing and compliance to enable Zambian products to meet sanitary and phytosanitary standards
  - Rural electrification, irrigation, education, and roads

Thank You

For more information see our websites at:
http://fsg.afre.msu.edu/zambia/index.htm

Or

http://www.iapri.org.zm/

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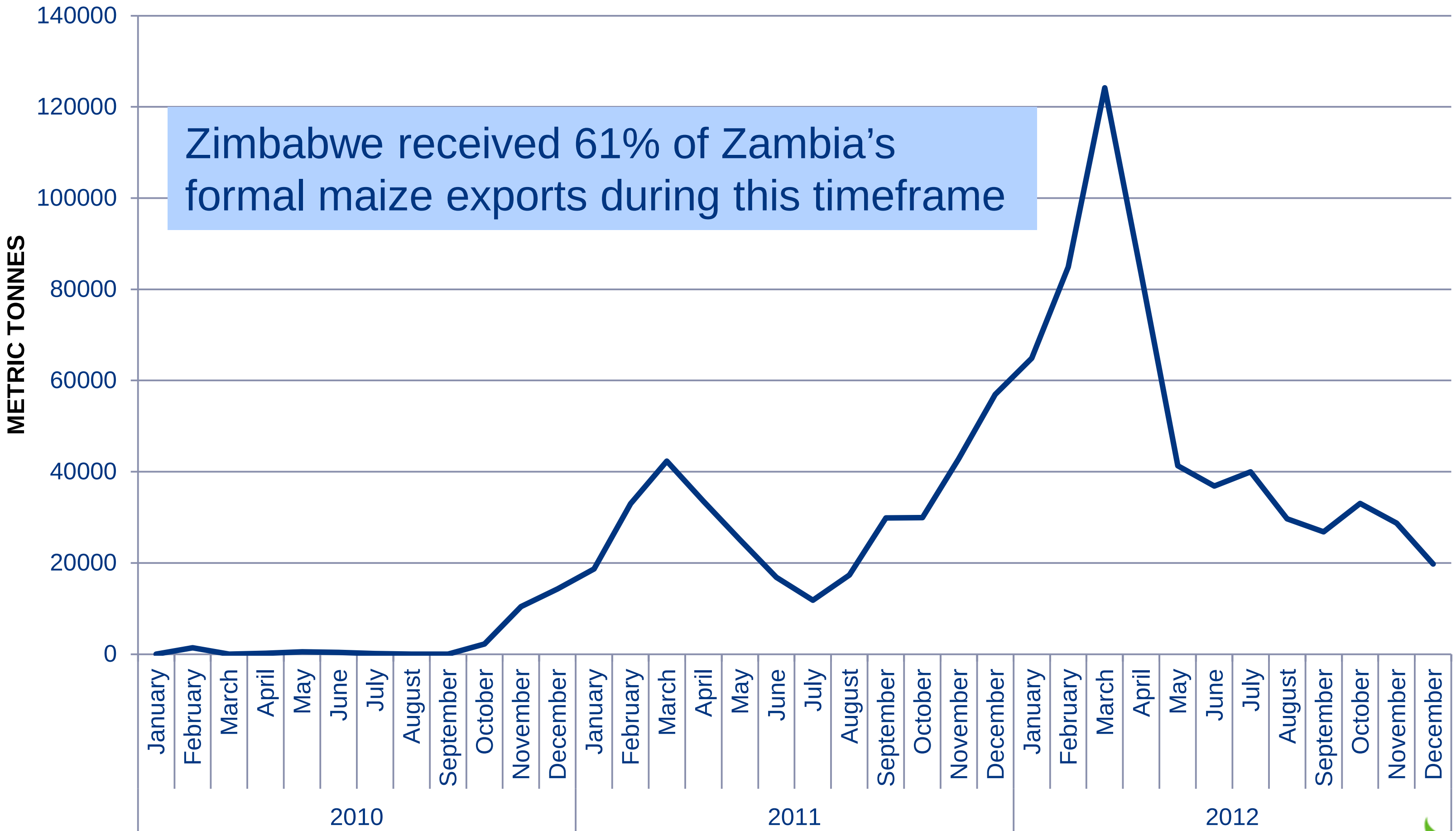
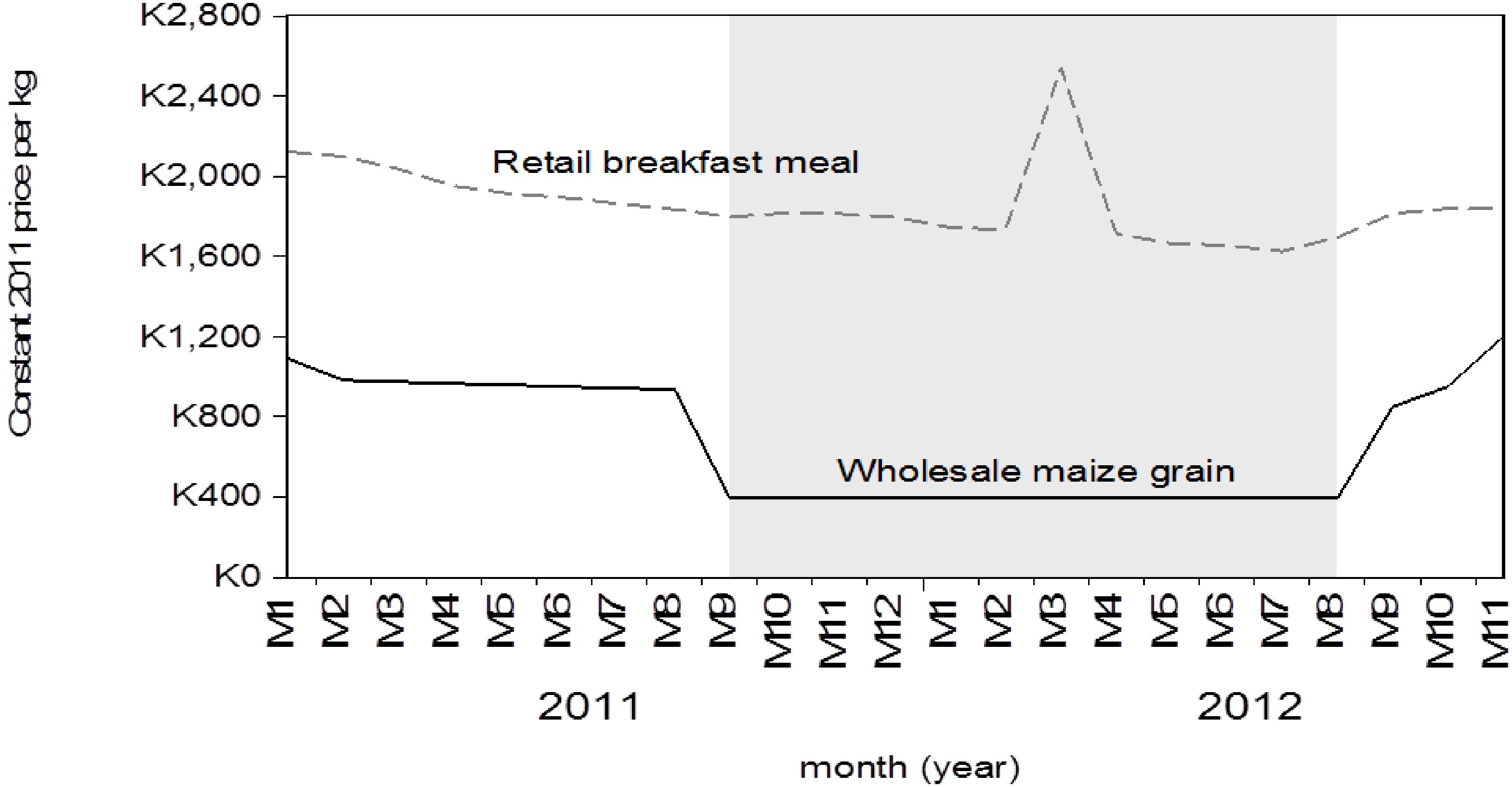
Additional Slides

Zambia's formal maize exports 2010-2012

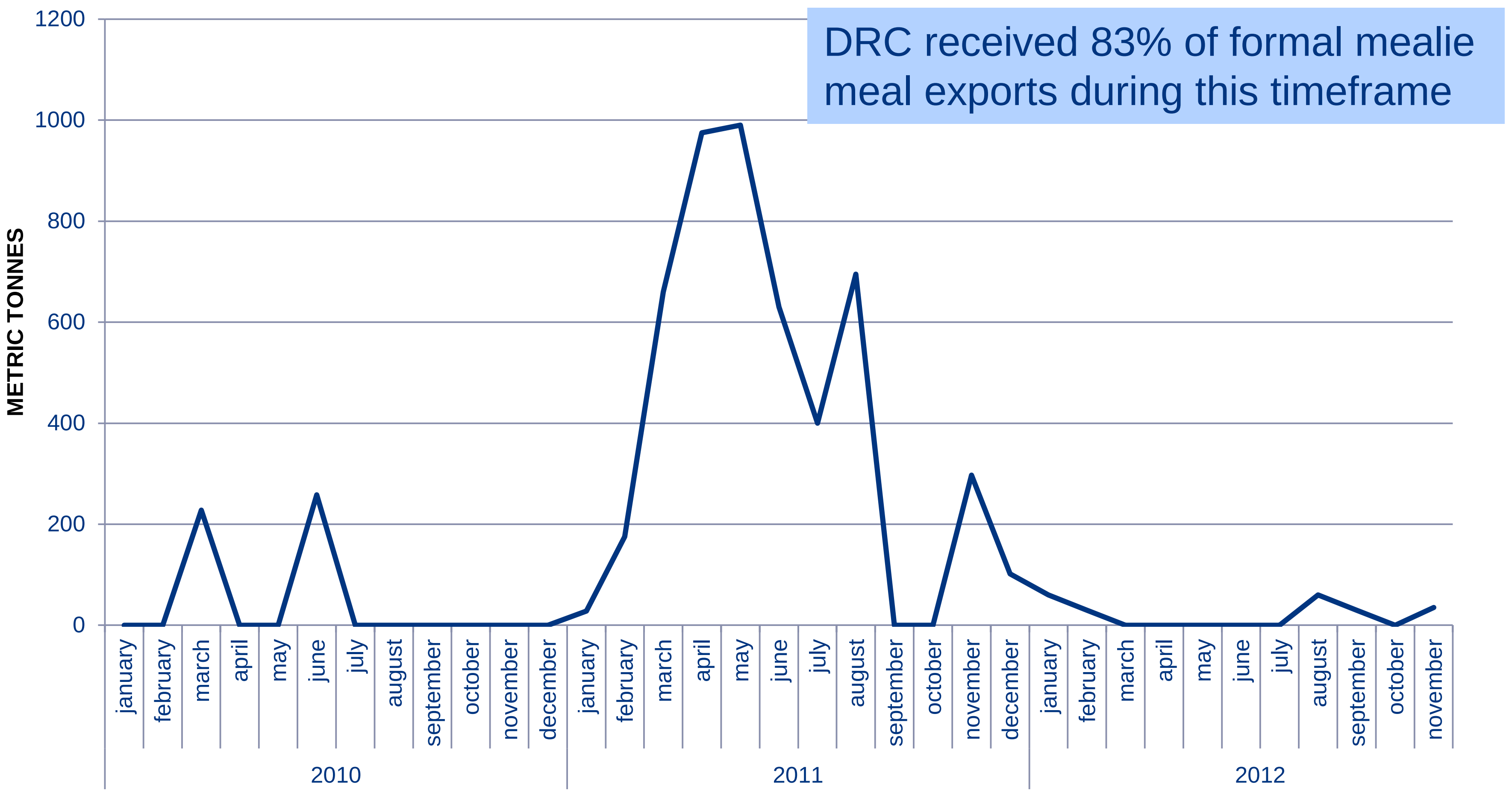


Effects of a reorganized maize market

Constant prices of wholesale maize grain and retail breakfast meal per kg in Lusaka



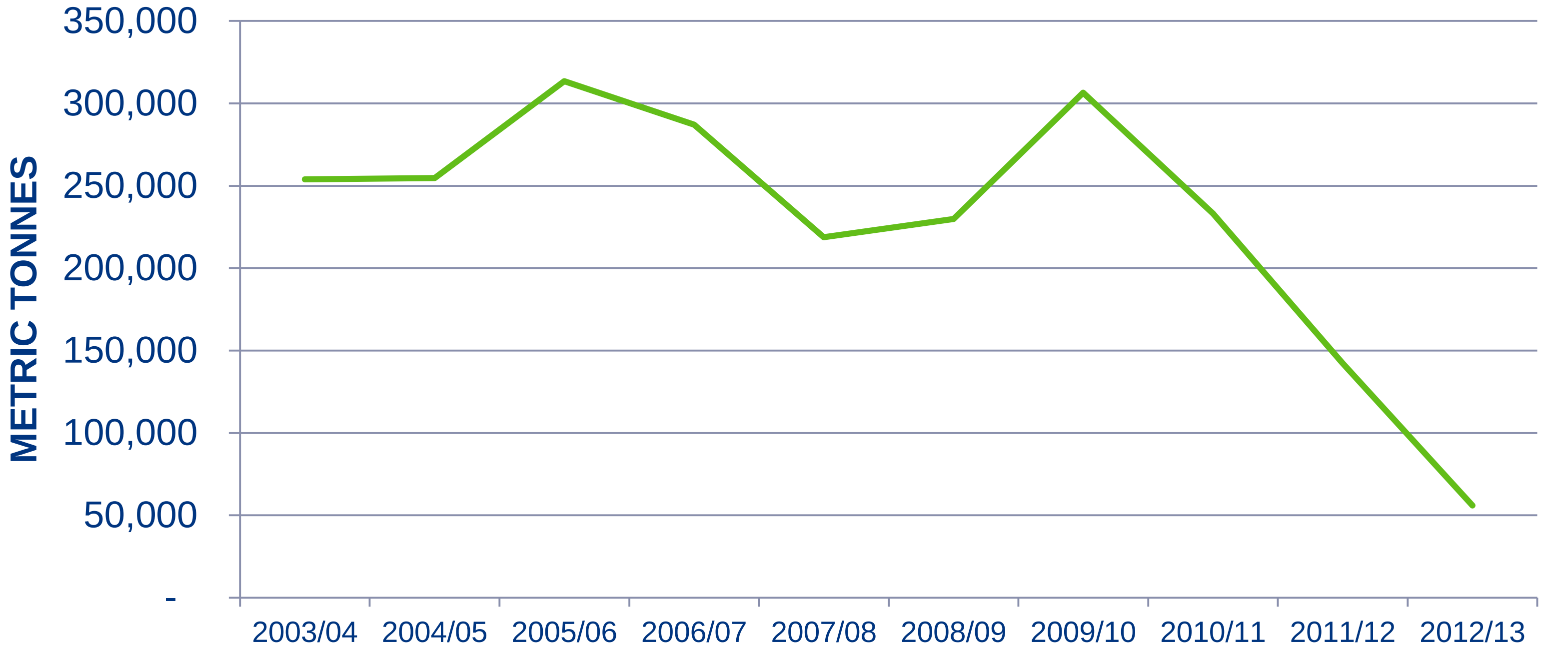
Formal Maize Meal Exports from Zambia 2010-2012



Effects of a reorganized maize market

- **Steep decline in maize production by commercial farms**

Commercial Farm Maize Production Trends 2003/04-2012/13



Intra-Household Crop Decision-Making: Male and Female Adult HH Composition percent distribution of decision to sell by sex of decision maker,2011