



# An evolution in the middle: Examining the rise of multinational investment in smallholder grain trading in Zambia

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# Introduction

- ▶ Recent wave of multinational investment in food systems in Sub-Saharan Africa (SSA):
  - ▶ To date research focused most intently on the downstream (food processing and retailing) and the upstream (commercial farm land acquisitions)
  - ▶ Less attention paid to the midstream
- ▶ Evidence of significant influx of MNC into Zambia's smallholder grain markets:
  - ▶ What are the causes and consequences of MNC investments?
  - ▶ What are the implications for the region?

# Data

- ▶ Zambia Rural Agricultural Livelihoods Survey (2012 and 2015)
  - ▶ Provides representative data on smallholder households at provincial level
  - ▶ Included specific codes for MNCs only in 2015
- ▶ Interviews with the four MNCs in Zambia's smallholder markets: Cargill, NWK-agri services, Afgri, and Export Traders
- ▶ Price data from Zambia national farmers union wholesale price database
- ▶ Interviews with farmers and traditional market actors.



# MNCs and Developing Country Food Systems

- ▶ Benefits:
  - ▶ Private standards and improved food safety and quality (Reardon et al 2004),
  - ▶ Enhanced market efficiency and competition (Arroyo et al 1985; Gutman and Bisang 2006; Caves 1996)
  - ▶ Improving technology access for farmers and other food system actors (Rama 1998, Wendt and Pederson 2006)
  - ▶ Improved market access and trade conditions (Ayadi et al 2004).
- ▶ Concerns:
  - ▶ Market concentration and the market power (Farina and Viegas, 2005; Tozanli, 2005).
  - ▶ Supply contracts provided by MNCs can serve to “lock-in” producers to specific markets (Dixon 2002),
  - ▶ Private standards limit participation of poor, small-scale farmers markets (Dolan et al 2005).



# MNCs on Smallholder Grain Markets

- ▶ Conditioned by the prevailing structure of “traditional” markets:
  - ▶ Numerous uncoordinated transactions between: poorly capitalized small-scale traders and farmers with limited surpluses to sell
    - ▶ Cumulatively high transactions costs, high price variable, and limited capacity to develop more structured, formalized and anonymous trading systems
    - ▶ Elevated risks of supply chain investments that could improve the performance of the market
- ▶ MNCs better able to overcome risks to smallholder supply chain investments and improve market coordination:
  - ▶ Greater scale/integration
  - ▶ Expertise and experience from different markets

# Growth of MNC investment in Zambia's maize markets

Province	Maize										
	2011/12				2014/15						
	Smallholder sales (MT)	Quantity bought by large-scale traders (MT)	% of provincial smallholder sales	% of total large-scale trader purchases	Smallholder sales (MT)	Quantity sold to DOMESTIC large-scale (MT)	% of total provincial sales DOMESTIC	% of total large-scale DOMESTIC purchases	Quantity sold to MNCs (MT)	% of total provincial sales to MNCs	% of total MNCs
Central	294,155	12,767	4%	31%	561,334	91,733	16%	61%	36,868	7%	41%
Copperbelt	92,623	2,255	2%	6%	119,433	6,670	6%	4%	4,687	4%	5%
Eastern	280,526	5,338	2%	13%	349,897	20,689	6%	14%	37,189	11%	41%
Luapula	71,685	1,101	2%	3%	117,743	335	0%	0%	-	0%	0%
Lusaka	40,514	45	0%	0%	60,409	5,644	9%	4%	568	1%	1%
Muchinga	120,411	1,994	2%	5%	171,370	1,876	1%	1%	-	0%	0%
Northern	161,796	828	1%	2%	216,627	846	0%	1%	144	0%	0%
NorthWestern	82,329	332	0%	1%	118,681	-	0%	0%	55	0%	0%
Southern	285,117	14,825	5%	37%	314,755	22,754	7%	15%	11,013	3%	12%
Western	31,196	1,130	4%	3%	35,041	-	0%	0%	-	0%	0%
<b>Total</b>	<b>1,460,353</b>	<b>40,617</b>	<b>3%</b>	<b>100%</b>	<b>2,065,289</b>	<b>150,547</b>	<b>7%</b>	<b>100%</b>	<b>90,524</b>	<b>4%</b>	<b>100%</b>



# Factors Driving Growth of MNCs: Demand and Supply

1: Smallholder consolidation: Farms greater than 10 ha in size have increased from 4% of the smallholder population in 2008/09 to 7% in 2014/15

Total land holding	Small-scale trader			Domestic Large-scale			Consumer/retail			FRA			Miller/processors			MNC trader		
	MT	Row %	Col. %	MT	Row %	Col. %	MT	Row %	Col. %	MT	Row %	Col. %	MT	Row %	Col %	MT	Row %	Col. %
0-2 ha	54,825	19	18	12,940	5	9	29,241	10	26	165,672	58	13	14,382	5	8	10,221	4	11
2-5 ha	84,019	16	28	21,057	4	14	32,689	6	29	336,527	65	27	20,042	4	12	21,172	4	23
5-10 ha	99,393	16	33	32,786	5	22	27,893	5	25	376,825	62	31	44,862	7	26	23,167	4	26
10-20 ha	40,621	10	14	41,175	10	27	12,485	3	11	257,099	61	21	45,240	11	26	25,883	6	29
>20 ha	21,917	9	7	42,589	18	28	9,778	4	9	98,792	43	8	48,869	21	28	10,083	4	11
<b>Total</b>	300,775	15	100	150,547	7	100	112,085	5	100	1,234,916	60	100	173,394	8	100	90,524	4	100

# Factors Driving Growth of MNCs: Demand and Supply

2. Transformation in retail and processing, triggered by income growth, urbanization and dietary change:

- ▶ Zambia is 41% urban, rate of urbanization 4.18%, per capita GDP increased to \$1,840 in 2013
- ▶ Domestic broiler production: 13 million 2007 to 43 million 2014
- ▶ Animal feed capacity: 320,000 mt/year in 2014 up from 10,000 mt in 2000
- ▶ Edible oil crushing capacity: 375,000 mt/year in 2013, up from 46,000 mt in 2008.
- ▶ Supply contracts from processors trigger entry to smallholder markets.
  - ▶ Commercial farm capacity inadequate to meet demand.



# Factors Driving Growth of MNCs: Demand and Supply

## 3. Previous investment in smallholder cotton:

- ▶ High fixed costs in cotton business, high levels of supply variability
- ▶ Desire to spread fixed costs over greater volume

# Factors Driving Growth of MNCs: Demand and Supply

- ▶ Favorable FDI policies, stable exchange rate, and low and stable inflation:
  - ▶ Until recently Zambia maintained multiple years of single digit inflation, low exchange rate volatility, and scored well (by regional standards) on World Bank Doing Business indicators.





# Implications of MNC investment in grain markets

1. Traditional market actors: Not squeezing out domestic players
  - ▶ Domestic large-scale trader investment growing fast
  - ▶ Small-scale traders remain the most important private sector buyer
    - ▶ Importance of local social capital and knowledge
    - ▶ Structure of market remains well-suited for traditional traders (dispersed and isolated farmers with limited surpluses to sell)
    - ▶ MNCs contracting traditional traders to buy on their behalf: formal and informal arrangements



# Implications of MNC investment in grain markets

## 2. Services for smallholders

	Received seed credit	Received fertilizer credit	Received market price information	Received seed credit	Received fertilizer credit	Received market price information
	Maize			Soybeans		
	.....% of respondents answered "yes".....					
<b>Small-scale trader</b>	0.9	0.1	73.8	0.4	0	84.7
<b>Large-scale domestic trader</b>	1.1	0	83.1	0	0	86.6
<b>Consumer/retail</b>	0.6	0.8	67.3	3.7	0	76.8
<b>FRA</b>	0.7	0	79.9	n/a	n/a	n/a
<b>Miller/processors</b>	0	0	83.8	4.2	0	83.3
<b>Other (NGO, schools)</b>	0	0	66.7	0	0	75
<b>MNCs</b>	11	2.1	92.7	6.5	0	94.8



# Implications of MNC investment in grain markets

## 3. Declining marketing margins

Average farm-gate wholesale price margins for maize

Province	2011/12	2014/5	Diff.
Central	0.356	0.105	-0.251
Copperbelt	0.24	0.1	-0.14
Eastern	0.329	0.189	-0.14
Luapula	0.215	0.253	0.038
Lusaka	0.195	0.144	-0.051
Muchinga	0.202	0.128	-0.074
Northern	0.212	0.236	0.024
North-Western	0.334	0.197	-0.137
Southern	0.345	0.163	-0.182
Western	0.148	0.114	-0.034
Zambia	0.293	0.162	-0.131

# Implications of MNC investment in grain markets

## 4. No discernable affect on farm-gate maize prices

VARIABLES	(1) Market channels and provinces	(2) + distance to point of sale	(3) + timing of sale
Market channel variables			
Small-scale trader=0	-	-	-
MNC	-0.00888 (0.0224)	-0.0194 (0.0216)	-0.0272 (0.0224)
Miller/processor	0.0977*** (0.0237)	0.0519*** (0.0201)	0.0409** (0.0191)
Other large scale traders	0.00890 (0.0152)	-0.00819 (0.0160)	-0.0133 (0.0166)
Consumer/retailers	0.112*** (0.0144)	0.114*** (0.0143)	0.114*** (0.0145)
FRA	0.0868*** (0.00992)	0.0861*** (0.00988)	0.0769*** (0.0110)
Other(Schools/NGOs)	0.589 (0.473)	0.587 (0.473)	0.584 (0.473)
Constant	1.083*** (0.0147)	1.080*** (0.0147)	1.110*** (0.0308)
Observations	4,501	4,500	4,500
R-squared	0.077	0.087	0.091



# Conclusions

- ▶ In flux of MNC investment associated with improvements in markets:
  - ▶ Continued competition from traditional market players
  - ▶ Increased access to services
  - ▶ Declining margins
    - ▶ More detailed analysis needed to assess causal relationships
- ▶ Factors conditioning MNC entry into Zambia's smallholder markets are:
  - ▶ Shared by other countries in the region: farm consolidation, dietary change, relatively open economies
  - ▶ Context specific: existence of commercial farm sector involved in grains, structure of cotton sector
  - ▶ Future expansion of MNCs in regional grain markets remains an open question



# Recommendations

- ▶ How to harness investment interest and manage pitfalls associated with market power? A two-pronged strategy:
  1. Support demand and supply conditions:
    - ▶ Supportive trade and macro-economic policies (beneficial to whole economy)
    - ▶ Defray costs and risks of smallholder market engagement:
      - ▶ Invest in horizontal arrangement linked to MNC markets
      - ▶ Support delivery of extension services , coordinated with MNC market requirements
      - ▶ Defray costs and risks of smallholder service delivery and contracting:
        - ▶ Share costs of first loss coverage on input credit/forward delivery contracts
  2. Support competition from domestic actors:
    - ▶ Differential access to and cost of credit
      - ▶ Prioritize policies to support development of warehouse receipt system to expand credit options for local actors



# Thank you





# Growth of MNC investment in Zambia's soybeans markets

Soybeans											
Province	2011/12				2014/15						
	Smallholder sales (MT)	Quantity bought by large-scale traders (MT)	% of provincial smallholder sales	% of total large-scale trader purchases	Smallholder sales (MT)	Quantity sold to DOMESTIC large-scale (MT)	% of total provincial sales to DOMESTIC large-scale	% of total large-scale DOMESTIC purchases	Quantity sold to MNCs (MT)	% of total provincial sales to MNCs	% of total MNCs
Central	6,097	678	11%	28%	18,009	4,740	26%	57%	3,101	17%	55%
Copperbelt	281	9	3%	0%	965	-	0%	0%	46	5%	1%
Eastern	5,126	1,513	30%	62%	11,454	2,703	24%	32%	2,386	21%	42%
Luapula	62	0	0%	0%	435	416	96%	5%	-	0%	0%
Lusaka	607	56	9%	2%	456	221	48%	3%	69	15%	1%
Muchinga	706	121	17%	5%	317	5	1%	0%	-	0%	0%
Northern	864	44	5%	2%	2,425	259	11%	3%	-	0%	0%
NorthWestern	619	2	0%	0%	1,047	-	0%	0%	-	0%	0%
Southern	124	4	3%	0%	537	-	0%	0%	62	12%	1%
Western	5	0	0%	0%	-	-	0%	0%	-	0%	0%
<b>Total</b>	<b>14,490</b>	<b>2,428</b>	<b>17%</b>	<b>100%</b>	<b>35,645</b>	<b>8,344</b>	<b>23%</b>	<b>100%</b>	<b>5,663</b>	<b>16%</b>	<b>100%</b>



# Conclusions

- ▶ Macro economic uncertainty weighs heavily on MNC investment:
  - ▶ Fragility of macro-economic environment highlights fragility of MNC investments in grain markets