

FERTILIZER SUBSECTOR DEVELOPMENT: COMPARATIVE ANALYSIS OF ETHIOPIA, KENYA & ZAMBIA

T.S. Jayne, Jones Govereh,
Maria Wanzala, and Mulat Demeke

“What Works for African Smallholders: Input Use and Market
Development in the Context of Limited Credit Markets”
Workshop, Ronald Reagan Center, June 5, 2003

Major Questions for Rural Development Policy

- Why do African farmers pay more for fertilizer than in most other parts of world?
 - Transaction cost explanations – in vogue
- What is the magnitude of realistically achievable cost reductions in the fertilizer marketing systems?
- What would be the impact of reducing fertilizer marketing costs on the profitability of using fertilizer?

What do we want to see in a well-performing fertilizer delivery system:

- Sustainably Increase Intensity of Use
- Use driven by strong commercial demand
 - Reduce costs of delivery to farmers
- Want to minimize use in areas where the cost of supplying fertilizer > additional value of crop output
- Sustainable mechanisms for financing inputs

What Determines Whether Fertilizer Use is Profitable?

$$WTP_i > \text{Cost of Fertilizer}_i$$

Cost of Fertilizer Determined by

- Transaction costs
- Physical costs of transport, handling, storage
- Mark-ups by traders
- Government behavior imposing costs on business
 - Taxes
 - Indirect effects on businesses (e.g., Zambia case of “double handling”)
- What is the relative importance of these factors?

Case Studies of Kenya, Zambia, Ethiopia

Kenya:

- Case where fertilizer distribution completely in hands of private sector
- 6 years after reform in 1993:
 - 12 importers
 - 500 wholesalers
 - 7,000 retailers
- Fertilizer use: 21 → 32 kgs per ha

Case Studies of Kenya, Zambia, Ethiopia

Zambia:

- case where government legalized private distribution but continues to run large-scale government programs
- Use: 15.2 → 7.9 kgs per ha

Case Studies of Kenya, Zambia, Ethiopia

Ethiopia:

- case of *de jure* reform and *de facto* state control
- Use 3.87 → 15.11 kgs per ha

Examples of Urea Cost Structure, 1998/99

	Malawi	Zambia	Ethiopia
	(\$US)		
CIF price at import point	126.50	133.00	125.00
Taxes	2.94	2.00	0.00
Port handling	8.50	5.50	12.57
Bagging	21.00	17.00	4.55
Port storage	1.50	3.00	0.74
Inland transport, handling, and storage	82.60	166.50	99.91
Financing/capital costs	41.89	12.90	7.03
Markup/margins	113.93	27.80	5.80
Farm-gate price	398.86	368.00	255.60

Source: Jayne et al., 2003.

Impact of Marketing Cost Reduction on Maize Profitability

	% Δ fertilizer price to farmer	Δ maize product. Costs
Remove Mombasa port taxes/fees	-4.7%	-\$8.62
20% Reduction in Transport costs (Kenya)	-4.1%	-\$7.38
Eliminate Double-Handling (Zambia)	-12.0%	-\$17.53

Conclusions:

- Domestic marketing costs account for over 50% of cost of fertilizer to farmers
- Over 50% of domestic fertilizer marketing costs are transport+ handling+ storage
- Traders' mark-up margins generally < 10% of total domestic marketing costs

Conclusions - II

- Changes in policies and public investments could appreciably reduce the cost of fertilizer to farmers

Conclusions - III

- Low fertilizer use in a given area doesn't mean "market failure":
 - Need to be more analytical about causes of low fertilizer use
 - Start with examination of profitability
 - Recognize the wide range of factors influencing profitability

Conclusions - IV

- Key role for the public sector:
 - Focus on reducing costs
 - Focus on raising farmers' ability to use fertilizer profitably:
 - Invest in port and rail rehabilitation
 - Road networks
 - R&D to generate more fertilizer-responsive varieties
 - Extension – how to improve farmers' management practices

Not New, Not Sexy, but Necessary to Address the Problem

- Lower domestic transport costs
- Consider reducing import taxes on capital (vehicles, spare parts)
- Diesel fuel tax in Zambia and Kenya
- Reduce uncertainty of government operations in the market
- Improve farmers' management practices to raise profitability of input use (e.g., conservation farming)