

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

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## Major Questions for Rural Development Policy

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- 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:

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- 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?

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

## Cost of Fertilizer Determined by

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- 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

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### 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

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### 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

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

Source: Jayne et al., 2003.

## Impact of Marketing Cost Reduction on Maize Profitability

	% $\Delta$ fertilizer price to farmer	$\Delta$ 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:

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- 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

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

## Conclusions - III

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- 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

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- 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

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- 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)