Strengthening Farmers’ Demand for Fertilizer

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Presentation Outline

• Overall objective:
  To illustrate the wide variety of fertilizer demand constraints in Africa and to identify the many policies and investments available to address them

• Key topics addressed
  – Why single out demand?
  – Determinants of demand
  – Use of screening questions to identify constraints
  – Entry points for addressing constraints

• Key messages to retain
Why Demand?

- Quantities of fertilizer used are determined by the intersection of the demand and the supply curve.
- It is possible to increase consumption by shifting either or both curves.
- Slow growth in fertilizer consumption since reforms suggests a need to identify cost-effective demand-pull investments and policy options to complement supply-push initiatives aimed at stimulating supply.

Shifts in Both Demand and Supply
Increase Consumption

[Diagram showing supply shifting out and demand shifting up]
Determinants of Demand: The Short Story

- Potential profitability at the farm level
- Farmers’ willingness to purchase
- Farmers’ ability to purchase

Determinants of Demand: The Longer Story

- Yield Response is influenced by:
  - Biophysical environment
  - R&D
  - Extension
- Input/Output Prices are affected by:
  - Subsector Structure
  - Basic Services
  - Government policies
- Farmer Skills and Capacity are shaped by:
  - Human Capital
  - Financial Capital
Determining Sources of Weak Demand

- The toolkit approach:
- A series of screening questions that help an analyst to look at a wide range of likely demand constraints and identify appropriate solutions
- Assumes that the analyst has already confirmed that fertilizer use is potentially profitable for crops and zones of interest

### Sources of weak demand

<table>
<thead>
<tr>
<th>Key Questions</th>
<th>Constraints</th>
<th>Remedies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does farmer have knowledge of profitable fertilizer recs?</td>
<td>- Poor research-extension links</td>
<td></td>
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<tr>
<td></td>
<td>- Weak extension</td>
<td>Better extension Advertising Demonstrations Basic education</td>
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</tbody>
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- Does farmer know how to use the inputs? 
  - Yes
  - Does farmer know how to use the inputs? 
  - No

- Are inputs available? 
  - No

- Are inputs affordable? 
  - No

- Is the level of risk acceptable? 
  - No

- Are inputs the best use of farmer’s resources? 
  - No

**Farmer purchases fertilizer**
2. Does farmer have knowledge and skills needed to efficiently use these inputs?

Key questions | Possible Constraints | Possible remedies
--- | --- | ---
1. Does farmer know about profitable inputs that s/he is not using? | • Poor research-extension linkages | • Better linked research & extension
2. Does farmer have knowledge and skills needed to efficiently use these inputs? | • Weak extension services | • On-farm demonstrations

RWANDA Traffic Light Guide to Profitable Fertilizer Use

Red indicates that promotion of fertilizer is NOT RECOMMENDED

Yellow indicates that a targeted fertilizer promotion program is RECOMMENDED WITH MONITORING

Green indicates that a STRONG FERTILIZER PROMOTION program is recommended

More Research Needed
Sorghum: Recommendations

Recommended per ha:

- 35:10:0+2S
- 69:21:0+4S
- 92:21:0+4S
- nil

Market Sale Productive Aim:

- 35:10:0+2S = 1 bag of 23:21:0+4S + 1 bag of urea per hectare
- 69:21:0+4S = 2 bags of 23:21:0+4S + 3 bags of urea per hectare

Home Consumption Productive Aim:

- 35:10:0+2S = 1 bag of 23:21:0+4S + 1 bag of urea per hectare
- 69:21:0+4S = 2 bags of 23:21:0+4S + 3 bags of urea per hectare

Unshaded areas are non-agricultural – lakes, cities, forest reserves, or national parks. Boundaries of the ADDs are shown.
Demonstrations

- There is growing evidence that demos play a key role in stimulating fertilizer use by smallholders
  - SCODP/FIPS in Kenya found:
    - 10% adoption in first year followed by 40-60% in second/third years—ALL THROUGH SALES!
- Good way to promote public private partnerships
  - FIPS promoting sales of fertilizer small packs with free seed samples provided by seed companies
  - Agricultural fairs expanding in Kenya
  - CNFA in Malawi promoting supplier sponsored demos with extension participation
3. Are these inputs available?

- Unfavorable business environment
- Traders have poor knowledge of demand and supply opportunities
- Market uncertainty due to government & donor programs

Possible remedies:
- Improve business environment
- Stockist training, market info and surveys
- Vouchers redeemable at input shops in lieu of non-commercial distribution

4. Are inputs affordable and/or credit available?

- Inappropriate packaging
- Weak financial institutions
- Information asymmetry limits credit
- High costs due to structural problems
- Poverty

Possible remedies:
- Small packs
- Incentives to financial institutions
- Institutions to reduce asymmetry
- Infrastructure investments, transport taxes
- Targeted subsidies (starter packs, vouchers)
5. Is the level of risk acceptable?

- Volatile output prices
- High climatic variability
- Large package sizes increase risk for beginners

Possible remedies:
- Market info, warehouse receipts
- SWC research
- Weather insurance
- Small packs

Ridge Tillage Improves Soil Moisture and Maize Yields in Mali

<table>
<thead>
<tr>
<th></th>
<th>W/O</th>
<th>1st year</th>
<th>2nd year</th>
<th>3rd year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kg/ha</td>
<td>1025</td>
<td>1422</td>
<td>1467</td>
<td>1900</td>
</tr>
<tr>
<td>MM Rain</td>
<td>1123</td>
<td>973</td>
<td>1022</td>
<td>779</td>
</tr>
</tbody>
</table>
6. Are inputs the best use of the farmer's available resources?

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<td>• Extensive production more profitable than intensive</td>
<td>• Research to improve fertilizer profitability</td>
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<tr>
<td></td>
<td>• Alternate investments (livestock, children's education) more profitable</td>
<td>• Targeted subsidy if economically justified</td>
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Yes → No

Yes

Farmer purchases fertilizer
Summary of key points

- Identify binding constraint; it—is not always price
- Consider wide variety of entry points & tools to
  - Reduce knowledge and skill gaps
  - Insure that desired inputs are available
  - Develop improved credit institutions and products
  - Reduce price and production risks
- Recognize that fertilizer may not always be the best solution to rural poverty and income problems, but…..

….when it is there is no denying the benefits

Before Fertilizer & improved seed

After fertilizer & improved seed

FIPS-Africa Photo
The End