Building input supply systems to improve access for farmers

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Challenges of markets
Access, affordability and incentives
Successes in building fertilizer markets
Key elements for going forward
"If high yielding dwarf wheat and rice varieties are the catalysts that have ignited the green revolution, then chemical fertilizer is the fuel that has powered its forward surge”

Norman Borlaug, Nobel Peace Price Laureate, 1970
New varieties available that could trigger the African green revolution….BUT
The crisis: Africa’s soils are impoverished and the continent loses $4 billion per year in soil nutrients.
Fertilizer use (per ha) in Africa is the lowest in the world.

In 1997-98, fertilizer use in Africa was significantly lower compared to other regions such as Latin America, South Asia, East Asia, and China.
NEPAD Goal for Africa: 6% annual agricultural growth rate by 2015

- Current fertilizer use: 1.4 million tons
- What’s needed: 5.2 million tons
- Must address challenges:
  - Access
  - Production
  - Incentives
Demand constraints

- Lack of inputs in affordable sizes
- Limited information and knowledge
- High risks (climatic and price risks)
- Poverty and weak purchasing power
- Poor functioning of rural financial markets
- High search costs to find fertilizers
Supply constraints

- Limited number of trained rural stockists
- Poor transport and handling infrastructure
- Small shipments raise unit import costs
- High import costs for low analysis fertilizers
- High taxes for transit supplies at ports
- High taxes on fertilizer imports
- Lack of harmonization of fertilizer regulations
While seeds and fertilizer companies supply commercial farmers, the poor face challenges: **Access, Affordability and Incentives**
The Paradox of markets in rural Africa:

“We don’t want Coca-Cola, we are looking for seeds and fertilizers”
Agrodealers and credit guarantees show huge successes in moving $ millions of inputs to the rural poor in Malawi: **16:1** capital leveraging ratio
Agrodealers are becoming the major source of inputs for the rural poor in Malawi (% farmers)
Kenya:
Agrodealers are growing in high potential areas

Map 5. Distribution of Stockists in Bungoma District, Western Province.
...but farmers in low potential areas must travel unbearable distances to find inputs
“Smart” public policies (subsidies?) needed to stimulate markets for pro-poor growth: Percentage of farmers using improved technologies in Kenya

<table>
<thead>
<tr>
<th>Farm size of farmers (acres)</th>
<th>% using improved varieties</th>
<th>% using fertilizers</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 0.25</td>
<td>0.6</td>
<td>1</td>
</tr>
<tr>
<td>0.25 – 0.5</td>
<td>2.9</td>
<td>5</td>
</tr>
<tr>
<td>0.51 – 0.99</td>
<td>9.3</td>
<td>3</td>
</tr>
<tr>
<td>1 - 2</td>
<td>23.6</td>
<td>23</td>
</tr>
<tr>
<td>&gt; 2</td>
<td>63.6</td>
<td>68</td>
</tr>
</tbody>
</table>
Stimulating demand for fertilizers: “Small” packs for “poor” farmers

- **FIPS, Kenya**: small packs empower experimentation with low risk
- Farmers trained in efficient use using demonstrations
- Initial success stimulates purchase of larger quantities
- Thousands of poor farmers reached at low cost
- Need to progress to economically optimal fertilizer levels
Successful Public-Private Partnership: “Mavuno” fertilizer small packs expand access and affordability to very poor farmers in Kenya

- Company develops multi-nutrient fertilizer blends
- Packs in 1 kg bags
- Yields up to 100% compared to DAP and Urea
- Dramatic success: After one year, firm invests US$ 8 million to expand capacity
- Within 2 years: over 10,000 tons sold – all to very poor farmers
Africa Must Cut Down High Fertilizer Prices: Value-to-cost ratio for fertilizers declined rapidly as fertilizer prices increased dramatically.

<table>
<thead>
<tr>
<th>Country</th>
<th>1980’s</th>
<th>early 2000’s</th>
<th>% Decline:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana</td>
<td>6.8</td>
<td>2.2</td>
<td>209</td>
</tr>
<tr>
<td>Malawi</td>
<td>7.4</td>
<td>1.3</td>
<td>469</td>
</tr>
<tr>
<td>Nigeria</td>
<td>7.5</td>
<td>3.1</td>
<td>141</td>
</tr>
<tr>
<td>Zambia</td>
<td>5.2</td>
<td>1.1</td>
<td>372</td>
</tr>
<tr>
<td>Tanzania</td>
<td>6.5</td>
<td>1.1</td>
<td>490</td>
</tr>
</tbody>
</table>
Africa has limited economies of scale in imports: Fertilizer imports in Africa

<table>
<thead>
<tr>
<th>Nutrient (tons)</th>
<th>Number of countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 – 10,000</td>
<td>25</td>
</tr>
<tr>
<td>10,000 – 30,000</td>
<td>6</td>
</tr>
<tr>
<td>30,000 – 50,000</td>
<td>6</td>
</tr>
<tr>
<td>50,000 – 100,000</td>
<td>3</td>
</tr>
<tr>
<td>100,000 – 150,000</td>
<td>3</td>
</tr>
<tr>
<td>&gt; 150,000</td>
<td>1</td>
</tr>
</tbody>
</table>
Africa must overcome structural supply-capacity constraints

- Joint procurement and distribution
- Improve regional transport infrastructure
- Import high analysis fertilizers
- Import bulked fertilizers, instead of bagged
- Eliminate all duties on fertilizers
- Improve regional fertilizer trade
Africa must expand local fertilizer production capacity

- Africa has 70% of the world’s rock phosphates
- Encourage private fertilizer manufacturing
- Why Africa should consider this?
  - Lower import costs and save foreign exchange
  - Optimize available local fertilizer resources
- Public policies are needed:
  - Access to finance for the private sector
  - Stimulate demand
  - Regional harmonization
Going forward: key elements for building fertilizer markets

- National (access, affordability and incentives)
  - Develop agrodealer networks
  - Establish national input credit guarantees
  - “Smart subsidies” for the poor
  - Packaging fertilizers in smaller sizes
  - Financing for fertilizer dealers
  - Better output price incentives
Going forward: key elements for building fertilizer markets

- **Regional (affordability)**
  - Joint procurement and distribution
  - Develop regional transport infrastructure
  - Promote local manufacturing of fertilizers
  - Harmonization of regulations and tariffs