Prospects for Agriculture and Fertilizer Market in Myanmar

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Background

- Country Size: 676,590 km²
- Population: 60 Million
- Agriculture Land: 12 Million (Ha)

[Map of Myanmar]
Major Crops in Myanmar

<table>
<thead>
<tr>
<th>Crop</th>
<th>Acres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rice</td>
<td>19,689,178</td>
</tr>
<tr>
<td>Pulses and Beans</td>
<td>11,122,206</td>
</tr>
<tr>
<td>Sesame</td>
<td>3,860,032</td>
</tr>
<tr>
<td>Groundnut</td>
<td>2,167,404</td>
</tr>
<tr>
<td>Rubber</td>
<td>1,245,414</td>
</tr>
<tr>
<td>Corn (Maize)</td>
<td>962,295</td>
</tr>
<tr>
<td>Cotton</td>
<td>819,114</td>
</tr>
<tr>
<td>Sugarcane</td>
<td>679,223</td>
</tr>
<tr>
<td>Chilli</td>
<td>384,232</td>
</tr>
<tr>
<td>Oil Palm</td>
<td>308,252</td>
</tr>
<tr>
<td>Tomato</td>
<td>266,316</td>
</tr>
<tr>
<td>Onion</td>
<td>178,895</td>
</tr>
<tr>
<td>Potato</td>
<td>95,632</td>
</tr>
<tr>
<td>Cabbage</td>
<td>74,803</td>
</tr>
<tr>
<td>Garlic</td>
<td>71,976</td>
</tr>
<tr>
<td>Melons</td>
<td>51,585</td>
</tr>
</tbody>
</table>

Perspective (agriculture land)

<table>
<thead>
<tr>
<th></th>
<th>Myanmar</th>
<th>Thailand</th>
<th>Vietnam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Land Area</td>
<td>653,520 km²</td>
<td>510,890 km²</td>
<td>310,070 km²</td>
</tr>
<tr>
<td>Agriculture Land</td>
<td>11.984 Million Ha</td>
<td>19.75 Million Ha</td>
<td>10.072 Million Ha</td>
</tr>
<tr>
<td>%</td>
<td>18.3 %</td>
<td>38.7 %</td>
<td>32.5 %</td>
</tr>
<tr>
<td>Arable Land</td>
<td>10.577 Million Ha</td>
<td>15.20 Million Ha</td>
<td>6.35 Million Ha</td>
</tr>
<tr>
<td>% of Agriculture Land</td>
<td>88.3 %</td>
<td>77.0 %</td>
<td>63.0 %</td>
</tr>
</tbody>
</table>

- Potential to expand agriculture land use
- If agriculture land is 35% of the total land area, it will be 22.9 Million Ha
- Could be double the size of Vietnam
Perspective
(rice yield and income)

<table>
<thead>
<tr>
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<th>Thailand</th>
<th>Vietnam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yield per Hectare (MT)</td>
<td>2.5 MT</td>
<td>3.5 MT</td>
<td>4.5 MT</td>
</tr>
<tr>
<td>Price (farm-gate)</td>
<td>US$ 170</td>
<td>US$ 350</td>
<td>US$ 270</td>
</tr>
<tr>
<td>Income per Hectare</td>
<td>US$ 425</td>
<td>US$ 1,225</td>
<td>US$ 1,215</td>
</tr>
</tbody>
</table>

- Based on average yield of rain fed rice
- Relatively low compared to neighboring countries
- Potential for yield increase
- Income of other crops are lower than neighboring farmers too
- Lower income due to lower yield, lower crop price, exchange rate, logistics and transport, wastage in post harvest, financing, trading system

* Thai price based on average and not on guaranteed price.

Fertilizer Market

- Local Production: 100,000 MT (13%)
- Import: 700,000 MT (87%)
- Total: 800,000 MT
Comparison with Neighboring Countries

Fertilizer Local Production

- Only urea is produced locally
- 80,000~100,000 MT Annual production
- Five government own urea plants
- Only three plants are in working condition
- Producing less than optimal production capacity due to the efficiency of the equipment and shortage of suitable gas for urea production
Fertilizer Imports

2011-12 Imports

<table>
<thead>
<tr>
<th>Nitrogen Source</th>
<th>MT</th>
</tr>
</thead>
<tbody>
<tr>
<td>urea</td>
<td>294,000</td>
</tr>
<tr>
<td>phosphate</td>
<td>150,000</td>
</tr>
<tr>
<td>potash</td>
<td>20,000</td>
</tr>
<tr>
<td>compound (NPK)</td>
<td>240,000</td>
</tr>
</tbody>
</table>

Nitrogen Sources

- Urea; 79.2%
- Blends; 20.0%
- Amsul; 0.5%
- Nitrate; 0.2%
Phosphate Sources

- SSP: 60%
- TSSP: 30%
- DAP: 5%
- Rock Phosphate: 5%
- Rock Phosphate: 5%

Fertilizer Importing Countries

- China
- Vietnam
- Germany
- Belarus
- Thailand
- India
- Russia
- Malaysia
China and Fertilizer Prices

• 90% import from China border
• Logistics and Convenience
• Prices (avoid export taxes)
• Small lots (in 10 wheelers) and easier financing
• Many small traders

Fertilizer Law

Enacted on 1st October 2002

• Product Registration
• Import / Export Registration
• Storage, Blending and Packing License and Registration
• Retail Registration
Opportunities in Fertilizers Market

• AFTA and AEC – Myanmar’s comparative advantage as agricultural based economy
• Located between the two world most populous countries
• Increasing cropping intensity and the need to boost yield
• Potential 7-8 times growth

Constraints

• Logistics and port facilities are limited to handle big volume fertilizer imports (max. 12,000 MT vessel)
• Financing options are limited but expected to be improved (for importers, dealers and farmers)
• Credit sales and Credit default risks (crop prices, irregular weather patterns, net worth of farmers and law enforcement) (could be as high as 30% in certain area).
• Farmers education level
• Sub-Standard Fertilizers / Chemicals and Law Enforcement
Conclusions

• There are opportunities to grow in the long term as the country develops
• Attractive market due to fewer number of competitors
• There are constraints, challenges and risks
• Companies should educate farmers for sensible use of fertilizers and chemicals, exercise care for the environment and consumers
• Myanmar needs transparent, ethical and responsible companies and investors