African Cashew initiative (ACi)
Case for private sector investment
January 20, 2012
Currently the segments of the cashew value chain take place geographically spread around the world.

- Africa accounts for 38% of global production but only 3% of processing.
- India and Vietnam dominate the processing sector.
- US, EU, and India account for the bulk of consumption.

### Value chain comparison, market share by volume, percent, 2010

<table>
<thead>
<tr>
<th>Country</th>
<th>Production</th>
<th>Shelling</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>38</td>
<td>30</td>
<td>2</td>
</tr>
<tr>
<td>India</td>
<td>28</td>
<td>52</td>
<td>25</td>
</tr>
<tr>
<td>Vietnam</td>
<td>14</td>
<td>17</td>
<td>30</td>
</tr>
<tr>
<td>EU 27</td>
<td>12</td>
<td>14</td>
<td>25</td>
</tr>
<tr>
<td>US</td>
<td>8</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>Other¹</td>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 Other countries include Indonesia, China, Sri Lanka, Philippines, Thailand, Middle East, Asia (except India, Cambodia, Vietnam), and non-EU Europe.
2 2011 estimates
3 Processing figures based on ISS/Fitzpatrick estimates
4 Based on ISS/Fitzpatrick report (2010)

Source: McKinsey analysis based on report by J. Fitzpatrick (2010); UN ComTrade.
Demand is growing rapidly in India and China

Source: ISS/Fitzpatrick analysis of customs in various countries including CEPC, Vinacas, Sindicaju, US Dept of Comm, EUSat, ChinaStat, UNComTrade, trade sources

- India consumption has more than doubled in 10 years
- China growth is significant
- US and EU slowing, dependent on health trends and economic swings

India: 9 CAGR, 2001-10
US: 4 CAGR, 2001-10
EU 27: 6 CAGR, 2001-10
China: 11 CAGR, 2001-10
India is the driving factor of future market conditions as production stagnates and domestic consumption will squeeze export volume.

Domestic consumption more than doubled in last ten years and will double again by 2020.

Exports decreasing.

Increased RCN imports are processed to meet domestic consumption, not export.

Crop production stagnant as best land moves to other crops (e.g. rubber in the South) and cashew planted on marginal land.

Since Vietnam’s production and processing are not expected to increase significantly, there is key concern of where Western countries will obtain import supply.

*Conversion of in shell to kernels on net 0.2 conversion (0.24 gross average imports and domestic less processing/harvest losses)*

Source: ISS/Fitzpatrick analysis of DCCD, India Department of Commerce, and trade sources.
This growing demand, resulting in decreasing surplus supply, has resulted in historically high cashew prices in 2010 and 2011.

As surplus levels dwindled in late 2000s, price increased.

With demand growth continuing in the future, the supply surplus likely turns to a deficit...suggesting further price increase possible.

This has translated to corresponding higher Raw Cashew Nut prices to farmers.

* Supply surplus computed as surplus supply in given year divided by that year’s demand/consumption
Source: ISS/Fitzpatrick database
Current projections suggest that prices will remain strong without a significant increase in supply—the question is how much.

**World Cashew Consumption**
- Metric tons of kernels

**World Cashew Production**
- Metric tons in shell

**World Cashew Price**
- WW320 kernel, USD per lb, annual average FOB lowest port

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1 Individual country demand growth assumptions summarized in Appendix
2 Production growth for each country estimated based on industry expertise; India 3% growth annually; Africa base case of 2-3% annual growth

Source: ISS/Fitzpatrick analysis; Cook analysis
Africa has the opportunity to supply growing demand by closing its yield gap

<table>
<thead>
<tr>
<th>Producer countries</th>
<th>Average expected production volume (MT)</th>
<th>Number of farmers (Thousands)</th>
<th>Typical area planted (000, ha)</th>
<th>Typical yield (kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cote d’Ivoire</td>
<td>335,000</td>
<td>300</td>
<td>838</td>
<td>400</td>
</tr>
<tr>
<td>Guinea Bissau</td>
<td>135,000</td>
<td>1,000</td>
<td>245</td>
<td>550</td>
</tr>
<tr>
<td>Tanzania</td>
<td>90,000</td>
<td>250</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>Benin</td>
<td>85,000</td>
<td>180</td>
<td>213</td>
<td>400</td>
</tr>
<tr>
<td>Nigeria</td>
<td>70,000</td>
<td>n/a</td>
<td>175</td>
<td>700</td>
</tr>
<tr>
<td>Mozambique</td>
<td>65,000</td>
<td>100</td>
<td>325</td>
<td>600</td>
</tr>
<tr>
<td>Senegal</td>
<td>20,000</td>
<td>60</td>
<td>57</td>
<td>350</td>
</tr>
<tr>
<td>Burkina Faso</td>
<td>16,000</td>
<td>25</td>
<td>40</td>
<td>400</td>
</tr>
<tr>
<td>Ghana</td>
<td>15,000</td>
<td>35</td>
<td>38</td>
<td>550</td>
</tr>
<tr>
<td>Kenya</td>
<td>10,000</td>
<td>60</td>
<td>33</td>
<td>300</td>
</tr>
<tr>
<td>The Gambia</td>
<td>7,000</td>
<td>10</td>
<td>14</td>
<td>500</td>
</tr>
</tbody>
</table>

*Countries in which ACi operates*
*Primary countries where cashews are grown*

1 There is some production in Sierra Leone, Liberia, Mali, and likely other African countries too, but no detailed data available

2 ISS based on reports from DCCD and Vinacas

Source: McKinsey analysis of report by ISS/Fitzpatrick; further ISS/Fitzpatrick updates

Typical benchmark yields are **1.2 tons/ha** in India (Maharastra) or Vietnam (Binh Phuc Province), suggesting Africa’s yield gap is >500 kg/ha
Increasing African production could have a significant impact on world cashew production and hence, future price scenarios.

**World Cashew Production Scenarios**

Metric tons in shell

Based on these world production scenarios, three illustrative scenarios of how price might evolve were created.

**World Cashew Price Scenarios**

WW320 kernel, USD per lb, FOB

Note on price scenarios: Long term price scenarios are based on industry expert’s input. They are intended to provide relative estimates and illustrate the potential impact of increased cashew demand compared to different potential levels of supply increase. It is not intended to provide specific price projections based on elasticity.

1 Production growth for each country estimated based on industry expertise; India 3% growth annually; African defined on previous slide

Source: ISS/Fitzpatrick analysis; Cook analysis
For importers into the US and EU, the potential price differences translate to significant cost differences of $260-515 million annually.

Based on 2008-10 average imports in US and EU, potential price difference equates to X cost difference for importers*....

<table>
<thead>
<tr>
<th>Price difference USD/lb</th>
<th>Difference in cost of imported kernels, $mil</th>
</tr>
</thead>
<tbody>
<tr>
<td>US</td>
<td>EU</td>
</tr>
<tr>
<td>$1.00</td>
<td>$257</td>
</tr>
<tr>
<td>$2.00</td>
<td>$515</td>
</tr>
</tbody>
</table>

Mitigating the risk of this magnitude of potential cost swing provides a retailer a return for investing in the African cashew supply chain--especially in farmer productivity given the key bottleneck in RCN yields. Increasing African, and hence world, production will impact price level in the face of increasing demand.

In addition to RCN production, enabling African processing will mitigate the supply chain risk of dominant processors.

- Domestic Indian demand will take precedence over export market
- China is logical market for Indian and Vietnamese exports
- Historical issues with Vietnamese supply contracts
- Monetary costs
- Environmental costs
- How much increased RCN volume can African ports realistically handle?

Africa provides a strategic opportunity for retailers to diversify their sourcing footprint and reduce supply risk.
African processing is a small portion of US kernel imports now...

- Increasing supply from Africa improves leverage within competitive world sector
- While Vietnam is largest supplier, the outlook for Vietnam growth is not significant
- Brazil likely to continue to be an important supplier due to proximity

Source: UN ComTrade; Cook analysis
...And of the EU’s also

- Increasing supply from Africa improves leverage within competitive world sector
- EU imports will increasingly compete with Indian domestic market demand
- Vietnam growth outlook is not significant

Source: UN ComTrade; Cook analysis
African processing has much room for growth

African Cashew Kernel Exports
Metric tons

Kernel exports used to estimate processing since most is exported

- 14,500 tons kernels translates to roughly 66,000 tons RCN
- ACi estimates that additional 100,000 tons of RCN will be processed in Africa by 2013, and continuing to grow

If retailers gain confidence in a stable supply of African processed cashews, there is a substantial marketing opportunity to sell distinctive African origin products

1 Assumes 1 kg RCN yields .22 kg kernel
2 Includes both processors affiliated with ACi and those not
Source: FAO Tradestat and ISS/Fitzpatrick; ACi; Cook analysis
Appendix
## Assumptions regarding cashew consumption

<table>
<thead>
<tr>
<th>Country</th>
<th>Cashew consumption growth assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>Continued demand growth at a conservative 9% (some trade estimates range as high as 17%) based on recent years and taking 2011 as an aberration due to fast price rise and lack of raw material. From 2017 onwards demand growth falling back to 6% constrained by lower supply and higher prices.</td>
</tr>
<tr>
<td>US</td>
<td>Demand growth assumed at 0% based on high prices, pressure from other nuts and snacks and health concerns.</td>
</tr>
<tr>
<td>EU</td>
<td>EU growth assumed at 5% through 2012 as demand recovers from the pressure of the financial crisis and the high price levels. Then dropping back as snack growth expected in areas other than cashews—2% to 2015 and 0% onward.</td>
</tr>
<tr>
<td>Middle East</td>
<td>Slower growth than in recent years but sustained growth at 6% as the product spreads to countries of North Africa and in Turkey. Traditional consumers will show steady growth.</td>
</tr>
<tr>
<td>Brazil</td>
<td>10% through 2014, 5% 2015 onward. There are signs of strong growth in the cashew confectionary sector. In addition the economic success of Brazil should boost demand in the coming years provided crops are good as import is difficult. In time the growth will drop back to normal levels constrained by domestic supply.</td>
</tr>
<tr>
<td>China</td>
<td>Consumption will grow 10% through 2014 as cashews are seen as a healthy food. But high prices will moderate demand growth to 6% later as, unlike India and the Middle East, the place of cashews in the Chinese food market is discretionary.</td>
</tr>
</tbody>
</table>

Source: ISS/Fitzpatrick

Refers to world cashew consumption estimates on Slide 6