Role of agronomic and business management training in promoting technology adoption

February, 2009
Cocoa is grown in tropical countries but consumed in temperate ones.

World cocoa production and exports 2006

000 metric tonnes

Source: ICCO
Cocoa production has grown steadily over time, though with considerable volatility from year to year.

World cocoa production 1961 to 2006

Metric tonnes

- Observed CAGR 3.5%
- Production grew faster than demand in the 1980s, led by Côte d’Ivoire, resulting in a price crash

Source: FAOSTAT
Consumption is concentrated in Europe and the USA, but emerging markets are growing fast, especially China.

If 400 million middle-income Chinese increase their chocolate consumption from the current 150g to 2kg per year (the level in Japan), they will consume an additional 800,000 tonnes of cocoa.

Source: ICCO 2007
West Africa accounts for ~70% of global production, led by Côte d’Ivoire and Ghana

Global production shares, 1961 to 2006

Most forecasts suggest that cocoa production will grow in all major producing areas in the next 5 years, led by Ghana and the Americas (which are likely to increase market share)

Source: FAOSTAT
Yields in West Africa are substantially below those in South-East Asia or the potential yield shown in experimental plots.

**Yield on mature cocoa fields***

<table>
<thead>
<tr>
<th>Location</th>
<th>Yield (Kg/ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana unimproved</td>
<td>250-350</td>
</tr>
<tr>
<td>Côte d'Ivoire unimproved</td>
<td>350-450</td>
</tr>
<tr>
<td>South-West Cameroon average</td>
<td>550-650</td>
</tr>
<tr>
<td>Malaysia average</td>
<td>800-1,000</td>
</tr>
<tr>
<td>Côte d'Ivoire improved</td>
<td>900-1,100</td>
</tr>
<tr>
<td>Soubr district farms</td>
<td></td>
</tr>
<tr>
<td>Ghana improved - Cocoa Abrabopa Association farms</td>
<td>1,000-1,200</td>
</tr>
<tr>
<td>Indonesia average</td>
<td>1,500-2,500</td>
</tr>
<tr>
<td>Experimental frontier</td>
<td>2,000</td>
</tr>
</tbody>
</table>

* The yield on mature cocoa fields excludes very young or old trees that are not in full production.

Source: STCP baseline survey; Ghana Cocoa Farmers’ Survey; FAOSTAT; Cocoa Abrabopa Association

**Implications:**

- Average producers in Côte d'Ivoire and Ghana would have to match the yields of their ‘best in country’ counterparts merely to attain the average yield in Malaysia and Indonesia.
- This magnitude of increase is only possible with a combination of hybrid trees and intensified use of inputs.

**However,** higher yields do not always translate to higher incomes for producers, especially if input prices remain high.

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**TechnoServe**

Business Solutions to Rural Poverty
Ghana Situation

Issues

- Low productivity
- Pests and diseases
- Poorly maintained farms
- Farmer mentality
- Economic issues
- Environmental issues

Previous interventions have had missing links

Commercial approach was not used in delivery

- Low yields
- Low incomes
- Poverty
Way forward for Ghana’s Cocoa industry

Improve productivity of the farmer

Through

1. Changing attitudes
2. Change in mentality
3. Total commercial orientation

When

NOW!

The world will leave us behind if cocoa farmers do not change
Cocoa Abrabopa Concept – Farmer Groups

- Technical training/orientation
- Input credit supply
- Business management training

Role of TechnoServe
Business management training a catalyst for technology adoption

Objective

Farmers operate farms as businesses where they keep production and financial records are kept.
- Profitability
- Productivity

Topics

- Entrepreneurship
- Contracts
- Records Keeping
- Leadership
- Business planning
Participatory learning approach- adult learning techniques

1. Classroom session
Basic business principles using illustrations and real life business cases

Methodology ensures participants take part during sessions
2. Mentoring

Tailored made solutions to address specific challenges
3. Monitoring and farm visits
   Follow-up visits to assess impact of intervention and provide advice
Impact

1. Yields increasing as a result of training and technology adoption

<table>
<thead>
<tr>
<th>Baseline (bags/acre)</th>
<th>3.30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean yields Year 1 (bags/acre)</td>
<td>7.30</td>
</tr>
<tr>
<td>Mean yields Year 2 (bags/acre)</td>
<td>8.34</td>
</tr>
<tr>
<td>Mean yields Year 2 Non CAA (bags/acre)</td>
<td>3.50</td>
</tr>
</tbody>
</table>
Impact

2. Technology Transfer

Willingness to adopt technology but unable afford inputs
3. Income

Incomes have increased
- Increase in yield per acre
- Reduction in transaction cost
- Production cost reduced
4. Loan Repayment

<table>
<thead>
<tr>
<th>2006/7 season Dec 31st</th>
<th>2007/8 season Dec 31st</th>
<th>2008/9 season Dec 31st</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;70%</td>
<td>80%</td>
<td>53%</td>
</tr>
<tr>
<td>Payment to date</td>
<td>Payment to date</td>
<td>Payment to date</td>
</tr>
<tr>
<td>95%</td>
<td>93%</td>
<td>90%</td>
</tr>
</tbody>
</table>

- Repayment has seen improvement; willingness to pay
- Payment done in large tranches in 2008/9 season because they want to reduce transaction cost
Conclusions

Commercial development of cocoa farmer combining business skills and agronomic training backed by credit provision leads to adoption of technologies-productivity.