Cocoa Sector Overview
Risks and Opportunities

as an introduction to:
Managing Risk in Côte d’Ivoire’s Cocoa Sector
Contents of Presentation

General
• Mars Incorporated
• Chocolate Market and Market Outlook, Cocoa Price History
• Price Risk Management by Industry
• Cocoa Production and Shifts of Production
• The Importance of Cocoa to various producing countries

Cocoa Sustainability:
• Awareness of Risk of Availability (Supply) in addition to Price Risk
• Identify Supply Challenges and Solutions through use of appropriate Science, capacity building and Pilot Programs conducted in “farmers’ fields”
• Develop Key Partnerships
Mars Incorporated is a family owned business that was founded in the USA in 1911 and we are a world leader in branded Snack foods, Main meal and Pet care products

Today, Mars Incorporated is a US$25 billion business operating in over 70 countries with 60,000 associates and 120 factories

Throughout our history the business has been guided by the Five Principles of Mars: Quality - Responsibility - Mutuality - Efficiency - Freedom

Mars Incorporated and Cocoa Sustainability: for Mars, cocoa beans are a key raw material and supply of affordable, good quality cocoa beans is important

Mars commits itself to help bring about necessary changes to transform the cocoa sector into a sustainable industry, focusing on economic, social and environmental wellbeing of all stakeholders
There is significant growth
• New Consumers in China, India, even Europe
• New Products (health aspects, dark chocolates)
Cocoa Prices:  
History 1979 – 2008 London Market

- Prices fluctuate
- Long term price trend is rather flat
Historical “Industry Focus”: Price Risk Management

Monthly Average NY Cocoa 2nd Futures Price

1960's: Crop Forecasts, Weather
Innovative Change & Cost Advantage

1970's Risk Management Importance

1980's Risk Mgt complex: Beans & Products, currency, politics etc.

Late 90's Geo Political Risk, awareness of non Sustainability

New: Health issues? Flavor? Reputation?
Production mondiale de cacao par continent

Global Cocoa Production: Last 100 years

Source: CIRAD
Issues with Cocoa Production in-country: Last 60 years

Ghana: policy, farm income, capsids

Nigeria: Witches’ Broom, low prices, currency

Brazil: Major economic growth, cocoa price, alternatives

Indonesia: Pest (cocoa pod borer),

Issues with Cocoa Production in-country: Last 60 years

Brazil
Ghana
Nigeria
IC
Malaysia
Indonesia

Years: 1950 to 2005

Metric Ton per Year
## Importance of Cocoa for African Countries

<table>
<thead>
<tr>
<th>Country Data and Cocoa</th>
<th>Cameroon</th>
<th>Nigeria</th>
<th>Ghana</th>
<th>Cote d'Ivoire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranking of cocoa as Agriculture income earner and as source of employment</td>
<td>1</td>
<td>n/a</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Ranking of cocoa as Agriculture income earner</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Production (2005)</td>
<td>180,000</td>
<td>190,000</td>
<td>630,000</td>
<td>1,400,000</td>
</tr>
<tr>
<td>People 'living' of cocoa</td>
<td>1,400,000</td>
<td>1,400,000</td>
<td>6,300,000</td>
<td>7,000,000</td>
</tr>
<tr>
<td>Percentage of people 'living' of cocoa</td>
<td>12%</td>
<td>1%</td>
<td>29%</td>
<td>44%</td>
</tr>
<tr>
<td>Foreign exchange earnings in millions US$</td>
<td>270</td>
<td>285</td>
<td>945</td>
<td>2,100</td>
</tr>
<tr>
<td>% of foreign exchange earnings derived from cocoa</td>
<td>15%</td>
<td>0.40%</td>
<td>30%</td>
<td>35%</td>
</tr>
</tbody>
</table>
Industry knows how to manage price risk
- But managing price risk is not enough if there will not be sufficient supply of affordable, good quality beans

Mars’ Commitment to Cocoa Sustainability
- Understand situation (Risk analysis)
- Identify Supply Challenges and Solutions; use, linking and Sharing of Science
- Capacity building in producing countries and
- Pilot Programs conducted in “farmers’ fields”
- Develop Partnerships
Challenges in the Current Cocoa Supply Chain

Economic issues - Low Yields

- Poor agronomic practices, pest and disease problems, ageing farms, inadequate planting materials, poor soil management and use of farm inputs

Economic issues - Other

- Land Tenure rights, Inadequate infrastructure and land-use planning, poor market information systems and quality signals, absence of crop diversification, no credit systems

Environmental issues

- Weather anomalies and trends, soil erosion, deforestation, water stress, global warming, monoculture issues

Social Issues

- Poverty, lack of education, diseases, vulnerable rural livelihoods, labor conditions i.e. WFCL

The long-term supply of cocoa is at risk
Missed production potential due to Pest and Disease and Soil Fertility

Lost potential in US$ by Issue

Loss US$ value

Fertility  Black Pod  Mirids  Rodents  CPB  WB  FPR

Cote d'Ivoire  Ghana  Nigeria  Cameroun  Indonesia  Latin America

Low income due to avoidable losses
When productivity and income decline due to avoidable soil nutrient depletion, land is abandoned....
Rainforest in Cote d’Ivoire change from 1955 to 1999

Land Availability is an Issue
Challenges of a sustainable cocoa supply chain - Down-stream

**Inadequate Marketing systems**
No or inadequate price information systems and low farm gate price compared to FOB and World Market price, poor price/quality signals to farmers, boom/bust cycles etc.

**Cocoa and Chocolate Market far away from Farmer**
Not enough direct contact and feedback to farmers, market forces at farmers’ end very different than those at consumers’ end

**Consumer Needs and Demands**
Good Quality but affordable product, pressure to improve human and environmental conditions for all stakeholders in chain

**Corporate Social Responsibility**
The image of a business, a product
## Competitiveness & Cost of Doing Business – Value of Cocoa

<table>
<thead>
<tr>
<th>Country</th>
<th>How many kg of rice can be bought by one kg of cocoa?</th>
<th>How many kg of cocoa are needed to buy one 100 cc motorcycle?</th>
<th>How many kg of cocoa are needed to buy one fertilizer bag</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>4,2</td>
<td>800</td>
<td>8</td>
</tr>
<tr>
<td>Ghana</td>
<td>1,5</td>
<td>2900</td>
<td>14</td>
</tr>
<tr>
<td>Côte d'Ivoire</td>
<td>1,1</td>
<td>5500</td>
<td>52</td>
</tr>
</tbody>
</table>

Sources: survey Ruf (CIRAD)

### Production and Purchasing Power:
Indonesian Cocoa Farmers have twice the yield and 500% more buying power from 1 kg of cocoa beans than Ivorian Cocoa Farmers

### Competitiveness and Policy:
Whilst Ivorian Farmers could compete on productivity (yield) with Indonesian Farmers they are still at a disadvantage – policy issues?
# Situation Assessment of Cocoa Growing Countries: Competitiveness

<table>
<thead>
<tr>
<th>Bulk Cocoa Origins</th>
<th>Avg. Yield (Kg/Ha)</th>
<th>Farm Gate Price as % FOB</th>
<th>Annual Pest / Disease Loss</th>
<th>Annual Soil Fertility Loss</th>
<th>Other Challenges</th>
</tr>
</thead>
</table>
| Côte d'Ivoire      | 450 (200-1000)     | 40-45%                   | 24%                       | 28%                       | • Lack of sector support  
|                    |                    |                          |                           |                           | • High tax rates  
|                    |                    |                          |                           |                           | • Limited land for further expansion  
|                    |                    |                          |                           |                           | • High % of aging cocoa trees |
| Ghana              | 400 (200-1000)     | 65%                      | 29%                       | 25%                       | • Limited land for further expansion  
|                    |                    |                          |                           |                           | • High % of aging cocoa trees |
| Indonesia          | 800 (300-1500)     | 84%                      | 49%                       | 15%                       | • Poorly flavored beans  
|                    |                    |                          |                           |                           | • Low rates of post-harvest fermentation  
|                    |                    |                          |                           |                           | • Major losses from Cocoa Pod Borer |
| Cameroon           | 425 (200-1000)     | 79%                      | 50%                       | 23%                       | • Sector neglect in favor of oil and gas industry  
|                    |                    |                          |                           |                           | • High % of aging cocoa trees  
|                    |                    |                          |                           |                           | • Major losses from Black Pod |
| Nigeria            | 350 (200-800)      | 79%                      | 50%                       | 23%                       | • Unsolved Witch's Broom infestation  
|                    |                    |                          |                           |                           | • Declining interest in cocoa farming |
| Brazil             | 175 (200-1500)     | 90%                      | 65%                       | 20%                       | • Farm Gate prices in Cote d’Ivoire are do not provide incentives for Cocoa Farming |

Sources: Mars internal data, Indonesia Cocoa Producers Association (Askindo), Bill and Melinda Gates Foundation Presentation, COPAL, WCF

- **The climate** in Côte d’Ivoire, Ghana and Indonesia is most **suitable** for cocoa cultivation.
- Whilst Ghana & Côte d’Ivoire yields are lower than Indonesia, they have the **lowest crop losses**.
- **Soil fertility in W. Africa** is low – but can be improved by use of compost and additional fertilizer.
- **Farm Gate prices** in Cote d’Ivoire are do not provide incentives for Cocoa Farming.

Cocoa could be a viable industry in West African Countries.
The Solution to current problems in the Cocoa Producing countries lies in

- **Competitiveness** (price, productivity, infrastructure)
- **Intensification** (germplasm, rehabilitation, P&D control, fertility)
- **Crop Diversification** (farmers cultivating several crops)

Whilst Mars and other Cocoa Industry stakeholders understand ‘cocoa issues’ such as competitiveness and intensification, more expertise is needed for ‘crop diversification’
Farm Diversification: Mixing of Crops or Several Single Crops
## Partnerships: Mutual and Complementary Goals

### Mutually Achieving Goals through Development of Sustainable Cocoa

<table>
<thead>
<tr>
<th>Goals</th>
<th>Mars, Inc. (and others in the cocoa and chocolate industry)</th>
<th>World Bank, Governments of Producer Countries, NGO's</th>
<th>Producer Organizations and Small Farmers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long Term</td>
<td>A socially, environmentally and economically sustainable cocoa industry with motivated farmers and assured supplies</td>
<td>Poverty reduction and economic growth through a market and trade oriented agriculture</td>
<td>Predictable yield, allowing investment in land and equipment; agroforestry systems that will expand the economy</td>
</tr>
<tr>
<td>Medium Term</td>
<td>Better quality and more reliable supply of cocoa from Asia by combating CPB</td>
<td>Sustainability and high quality technical support implemented at little incremental cost</td>
<td>Increased yield and income; reduced labor cost/acre</td>
</tr>
<tr>
<td>Short Term</td>
<td>Opportunities in trading; infrastructure, training</td>
<td>Global access to world-class knowledge and advanced technical innovations</td>
<td>Improved understanding of farming techniques; improved planting materials</td>
</tr>
</tbody>
</table>
Cocoa Sustainability
Mars Incorporated Initiatives

Mars Inc. works in Partnerships and Collaboration with:
- Research Institutes
- Government, Public and Civil Society Institutes
- Private industry

Mars Inc. focuses on our Expertise, i.e.
- Analysis: both in-house and external
- Science: e.g. Cocoa Genome
- Implementation: Mars Cocoa Development Centres, iMPACT
- Supply Chain: Certification through Rainforest Alliance, Utz Certified
Example of Mars leading Science: Molecular genetics *at USDA*

Mars waives IP rights on this research
Example of application of Science in a Mars Cocoa Development Centre

Side grafting

Results from grafting

Top grafting

Rehabilitation
Thank You