Sustainable Intensification of Cocoa Production
How to ensure supply meets global demand

Martin Kodde
Head Food Chain Engagement
Syngenta Ltd Switzerland

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• Introduction to Syngenta
• Supporting Africa’s farmers
• Defining Sustainable Intensification of Cocoa Production
• Our contribution to improve productivity
• Demonstrating the proof of concept
• Our suggestions
Introducing Syngenta – a global Agribusiness Company

- Over $1 billion annual R&D investment and more than 5,000 R&D staff
- Over 26,000 Employees in some 90 countries
- $13.3bn sales in 2011
Helping small and large farms meet the challenges of global food security

Our ambition is to bring greater food security in an environmentally sustainable way to an increasing populous world by creating a worldwide step-change in farm productivity.

450M smallholder farms 
~1.0 Ha

8M large-scale farms 
>100 Ha
Grow more from less...for food security

<table>
<thead>
<tr>
<th>Resource efficiency</th>
<th>Better solutions</th>
<th>Rural Economies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preserving the land:</td>
<td>Choices on the farm:</td>
<td>Building markets:</td>
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<tr>
<td><em>We need to increase productivity on existing farmland.</em></td>
<td><em>We need enabling and transparent regulations, which make safe technologies available to farmers.</em></td>
<td><em>Farmers need supporting infrastructure and access to markets, finance and information.</em></td>
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<tr>
<td>High stakes for water:</td>
<td>Accelerating innovation:</td>
<td>Valuing farm work:</td>
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<tr>
<td><em>We need solutions that increase water efficiency.</em></td>
<td><em>We need mechanisms to share innovation.</em></td>
<td><em>Rural economies carry the weight of feeding the world; farming needs to be worthwhile and profitable.</em></td>
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<tr>
<td>Vitality of biodiversity:</td>
<td>Sharing knowledge:</td>
<td>Community development:</td>
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<tr>
<td><em>We need to protect the diversity of nature to secure our food supply.</em></td>
<td><em>We need new partnerships to raise agronomy skills and share expertise.</em></td>
<td><em>We need agriculture to spur socio-economic development of rural communities.</em></td>
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</tbody>
</table>
Breakthrough ideas and achievements come from collaborating beyond boundaries
Delivering new technologies to drive land productivity

Innovate
Beyond single products,
Crop specific, Partnerships

Promoting integration and recognition

NUCOFFEE brings together Roasters, Growers and Cooperatives, creating opportunities for real sustainable business partnerships

NUCOFFEE preserves the origin of the coffees and returns a premium for their quality enabling growers to reinvest in their farms and community

NUCOFFEE Trip to Origin – Opportunities for roasters and growers to exchange knowledge and share their passion for coffee.

PLENE: Focus on efficiency and sustainability

The first integrated mechanized planting system for sugar cane

15% Cost reduction for growers

Healthy seedlings production at Syngenta nurseries
Production and processing units
Planting
Labor
Continued value creation

Disease-free
Traceable
Genetic warranty
Minimal tillage
High productivity
Better use of natural resources
Faster germination
Increased resistance

Cleaning and cutting
Treatment with Syngenta technologies
Packaging
Less maneuver
Greater efficiency
Better working conditions
Complete crop protection program
Greater convenience and reduced cost
Committing to support farmers in Africa

Africa

Investment in African agriculture to bring real and sustainable change
Syngenta commitments to African agriculture

Over the next 10 years, we will

- Link people, land and technology
- Address food security and poverty
- Invest $500 million over time
- Launch Agriculture Productivity Partnerships

Reach **5 million farmers** to enable **productivity** gain while **preserving** the long term potential of the **land**
... and providing solutions to all the barriers smallholders face

**Productivity**
- Seeds, fertilizers, pesticides, nutrients
- Agronomy info
- Product stewardship
- Water, environment management

**Profitability**
- Harvesting, storage, transport
- Purchase agreement
- Food mfg, retailers
- Govt
- Infrastructure com

**Input / knowledge / resources**

**Finance and insurance**
- Investment in farm
- Credit for inputs
- Weather/production insurance
- Align with Microcredit institutes and insurance companies

**Market access infrastructure**

**Market/weather/pest info**
- Market information
- Price information
- Weather information
- Pest and disease information
- IT com
- Mobile com
Cocoa productivity needs to rise to meet demand

Demand will increase
- Increase of world population
- Increase of world consumption
- Increase of cocoa uses

Productivity must follow but
- Not enough available land
- Poor levels of production
- Competing crops for land

Professional farming the solution, but
- Limited access to innovative inputs
- Educational gaps
- Remuneration for growers marginal

Demand of 5 million tons = 1.5m hectares more land
or
improve productivity by 25%
on existing growing area
by
increasing yields from 350 to > 500 kg per hectare
What does sustainable intensification for a cocoa farmer look like?

- Improving crop productivity
- Access to quality inputs
- Building rural prosperity
- Increase crop income
- Reducing agriculture’s environmental footprint
- Improve knowledge
What are the bottlenecks for productivity?

<table>
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<tr>
<th>Marketable Yields</th>
<th>Post harvest losses</th>
<th>Pre harvest losses</th>
<th>No nutrients, old genetics</th>
<th>Hubandry losses due to farming practices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Will drive farmers income</td>
<td>moulds, pests, storage</td>
<td>diseases, pests</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Losses from farm to port =
> fix all not just one

> 1000 kg/ha
> 350 kg/ha
And can we overcome them?

**Education & Husbandry**
Build growers skills to produce better quality and higher yields. Complement farmer training, do it together and everybody will benefit.

**Fertilizers & new trees**
Scale-up great initiatives to rejuvenate older plantations and allow growers access to sustainable source of fertilizers.

**Crop Protection**
Today's cocoa pest and disease stands for $2 billion losses. Access to high quality technology to improve yield by 20 - 40%.

**Post harvest management**
We can’t afford to lose a single kg after harvest. Harvesting high quality cocoa free of disease and pest is a first step, but many to follow.
Syngenta’s contribution in the cocoa value chain

Our contribution to trigger change
Syngenta has a proven record in delivering quality crop protection solutions for cocoa

- Global MRL setting
- Reduced copper dependency
- Best use of application technology
- Post harvest quality protection

R&D

- Established brands
- New modern brands

Portfolio

- Ensuring grower access to crop protection products e.g. Ivory Coast
- Support initiatives: Nestlé Cocoa Plan RCI
- Collaboration: Cargill, Ecom, ADM others
- Lead initiatives: Camcoa 300 Cameroon

Partnerships
Demonstrating the proof of concept

- Camcoa 300 in Cameroon
- Partnership in Ivory Coast
- Prosperity in Indonesia
Ivory Coast : Contributing to the Nestlé cocoa plan.
Pilots initiated in 2012

Syngenta role

- Supporting with all Crop Protection elements
- Coordinate with partnership
- Communicate achievements
- Provide trainings and support demo farms

The partners

- Nestlé, Cocoa Traders
- Crop Protection Distributors
- Officials

Offer for growers and cooperatives

- Training pest and disease identification
- Training safe use and proper application of pesticides. Recognising faked products.
- Support preparation for certification

Achievements in 2012

- 4 cooperatives in the pilot
- 1 demonstration farm operational
- First positive effect of yield improvement > 50 %
Cameroon: “Camcoa 300”:
Multi-stakeholders partnership to support ambition to produce 300,000 tons cocoa in Cameroon

Syngenta role

- Coordinate partnerships and manage projects
- Communicate achievements
- Provide trainings and support demo farms

The partners

- MUCADEC: Cooperative Bank
- CED: Development centre
- Fakoco: Cocoa Trader
- FIMEX and JACO: Distributors

Offer for growers and cooperatives

- Training pest and disease identification
- Training proper application of pesticides
- Training postharvest quality management
- Development entrepreneurial spirit
- Opening of savings accounts for grower
- Support preparation for certification

Achievements in 2012

- 9 cooperatives and 3100 growers in the project
- 8 demonstration farms operational
- 1400 growers trained
- 650 new bank accounts opened
- First positive effect of yield improvement + 40% – 100%
Indonesia: “Cocoa for prosperity”
Multi-stakeholders partnership to drive increase in productivity & quality; Building on pilot success, expansion planned for 2013

Background
- Old cocoa trees
- Low quality of beans
- Productivity decline
- Reduction in revenues
- Area loss

Significant market challenges gave rise to: “Cocoa for prosperity”

“Cocoa for prosperity”: key elements of program:
- Representatives from wide range of stakeholders
- Training is a key feature
- Seeing is believing: “Cocoa Learning Centres”

Pilot results supportive of program scale-up!
✓ Participating farmers report 40%-200% yield increase
✓ 1200 growers to be trained by mid 2013
Final suggestions

We can increase productivity in a sustainable way

But we will only succeed by working together in supporting professional cocoa farming
Thank you

Information: www.syngenta.com
martin.kodde@syngenta.com