The Peru Cocoa Alliance Experience on Expanding Fine Flavor Cocoa under Agroforestry Systems: learned lessons and challenges

A contribution to make Peru a reliable and sustainable source of fine flavor cocoa for the World Chocolate Industry

Thrid World Cocoa Conference | Bávaro, República Dominicana
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1. The Peru Cocoa Alliance (PCA)

- PCA is a public-private partnership initiative supported by USAID.
- Contribute to the development of the *fine flavor cocoa* value chain in Peru.
- Create more opportunities of licit economics activities for farmers who abandoned the illegal coca cultivation.
2. Peru Cocoa Alliance Goals: 2012-2016

- Installation of 28,000 ha of cocoa
- Graft 23,000 ha of fine flavor cocoa
- Georeference 23,000 ha of fine flavor cocoa
- Install 16,700 ha of fine flavor cocoa under the agroforestry system
- Incorporate 16,000 small-scale producers on fine flavor cocoa business plans
3. Peru Cocoa Alliance Achievements, April 2016

- San Martín: 6,952 families, 10,381 ha of cocoa, 8,366 ha of temporary shade, 6,707 ha of cacao installed, 7,836 ha of covered cacao.
- Ucayali: 5,724 families, 10,381 ha of cocoa, 5,851 ha of temporary shade, 3,571 ha of cacao installed, 9,731 ha of covered cacao.
- Huánuco: 4,941 families, 9,145 ha of cocoa, 5,853 ha of temporary shade, 3,528 ha of cacao installed, 7,868 ha of covered cacao.

TOTAL:
- 17,617 families
- 30,136 ha of cocoa
- 27,825 ha of cacao installed
- 3,675 ha of cacao with temporary shade
- 20,021 ha of cacao with temporary shade
- 13,807 ha of forest species
- 20,070 ha of georeferenced hectares
PCA intervention area:
3 regions,
16 provinces,
84 districts,
1,006 communities,
17,600 producers
4. Four Key Issues based on the PCA Experience

4.1. Choosing competitive fine flavor varieties and the “clonal” arrangements technology.

4.2. Generating fine flavor cocoa planting material for more 23,000 ha, supply and demand coordination.

4.3. Facing the risk to promote deforestation: the Alliance Agroforestry System, recover deforested areas and carbon sequestration impact.

4.4. Reducing transaction costs: fine flavor cocoa georeferenciacion and traceability.
4.1. Trinitario hybrid cocoa selected by the Peru Cocoa Alliance for its arrangements.

The Alliance has selected seven trinitario clones that comply with the fine flavor characteristics:

1. ICS1
2. ICS6
3. ICS39
4. ICS95
5. TSH565
6. UF 667
7. IMC 67
Fine Flavor Cocoa Yield Potential (kg/ha, dry bean)

Fine Flavor Cocoa Bean Weight

Dry bean weight (gr)

<table>
<thead>
<tr>
<th>Variety</th>
<th>Weight (gr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICS 95</td>
<td>1.3</td>
</tr>
<tr>
<td>ICS 39</td>
<td>2.2</td>
</tr>
<tr>
<td>ICS 1</td>
<td>1.3</td>
</tr>
<tr>
<td>ICS 6</td>
<td>1.6</td>
</tr>
<tr>
<td>TSH 565</td>
<td>1.4</td>
</tr>
<tr>
<td>CCN 51</td>
<td>1.4</td>
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</tbody>
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Number of Pods per Kilo of Fine Flavor Cocoa

Number of Pods per Kilo

<table>
<thead>
<tr>
<th>Variety</th>
<th>Pods per Kilo</th>
</tr>
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<tbody>
<tr>
<td>ICS 95</td>
<td>22</td>
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<td>ICS 39</td>
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<td>TSH 565</td>
<td>15</td>
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<td>CCN 51</td>
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4.1. The clonal arrangement technology for fine and flavor cocoa expansion

- Agroforestry systems using fine flavor cocoa "clonal arrangements".
- A "clonal arrangement" is a combination of different cocoa hybrids with a high level of sexual intercompatibility, which ensures more flowering and therefore more productivity.
Fine Flavor Cocoa Sexual Compatibility Matrix

Source: Granja Luker, Colombia; National Federation of Cocoa Growers of Colombia, FEDECACAO
4.1. Trinitario hybrid cocoa arrangements of the Peru Cocoa Alliance

A total of six different arrangements have been created, ensuring high sexual compatibility and, therefore, high yields, using Colombia's Casa Luker's and Colombia’s Federación de Cacaoteros matrix:

ARRANGEMENT 1: (33% ICS95 / 33% ICS 39/ 17% ICS1/ 17% TSH 565)
ARRANGEMENT 2: (50% ICS39 /25% ICS 95/ 25% IMC67)
ARRANGEMENT 3: (37.5% ICS39 / 25% ICS 95/ 25% TSH 565 / 12.5% ICS1)
ARRANGEMENT 4: (50% ICS39/25% ICS95/ 12.5% IMC67/ 12.5% ICS6)
ARRANGEMENT 5: (46% ICS95/ 27% IMC67/ 27% ICS1)
ARRANGEMENT 6: (60% ICS 95/ 35% ICS39/ 5% ICS6)
4.2. The challenge to produce and to deliver planting material

- 23,000 ha grafted = 9.7 million of rods/sticks
- San Martin: 1 MM trees of fine flavor but highly disperse
- Juanjuí: PCA planting material production center, 80,000 of fine flavor cocoa trees identified.
- Juanjuí-Curimaná: 780 km, logistic challenge.
- Supply and demand coordination.
Grafting: 20,021 ha with fine flavor cocoa varieties (12,810 producers).
4.3. Facing the risk to promote deforestation: fine and flavor cacao with “zero” deforestation
4.3. The Peru Cacao Alliance Agroforestry System
4.3. CO2 Capture Estimates for the Alliance Cacao Perú Agroforestry System

- The installation of 28,000 ha of cocoa under SAF will generate 5.1 million tons of CO2, and will capture 62.9 t of CO2.
- The Alliance's 28,000 ha capture 57.8 million net tons of CO2 throughout the commercial life of cocoa (25 years).
- This means it will capture 82.5 tons of CO2 per hectare per year.
4.4. Reducing transaction costs: fine flavor cocoa georeferenciation and traceability

• The PCA Monitoring System: more than 17,000 small producers and 27,825 ha included.
• We conduct two surveys a year to audit the results.
• Georeference fine flavor cocoa for commercial purposes: the “birth certificate” of traceability.
Georeference and trazability: each hectare with fine and flavor cocoa grafted is geo referenced and include in M&E System. We have already 20,070 ha georeferenced with 12,709 producers of fine flavor cocoa.
5. PCA Fine Flavor Cocoa Business Model: 5 Principles

- **Market concept**: differentiation; “market driven” = direct contact with chocolate makers.
- **“Biodiversity as competitive advantage”**: 7 varietal species of fine flavor cocoa in PCA model.
- **“High yields model”**: combine “sexual intercomptibility” among varietal species of fine flavor cocoa to reach high yields.
- **“Climate change resilient model”**: restoring the landscape incorporating timber species as a source of long term income and CO2 secuestration.
- **Small farmer associativity, georeference, trazability and private partnership**: to reduce transactions costs and to take advantage from the “private know how”. 
6. Challenges

- **Post harvest:** is a key for success in fine flavor market.
- **Investment in infrastructure:** centralized post harvest facilities
- **Invest on research to improve harvest process** for fine flavor cocoa.
- **Research about fine flavor varieties** in our countries to answer the key questions for farmers: **productivity and diseases**.
- **Governments:** to define strategic plan for fine flavor cocoa sector.
- **Partnership with private sector:** to be strengthened
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PROVEEDORES INSUMOS, TECNOLOGIA Y FINANCIAMIENTO

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