

# Evaluation of cocoa plantation

Owner: **XXX**

ID Doc: **CNPJ yy.nn.nnn/nnnn-nn7**

Property name: **Fazenda XYZ**

Address:

Municipality / Locality **XXXX**

Postal Code: **nnnnn-nnn**

Department / State: **Bahia**

Country: **Brazil**

Tel.: .....

Email: .....

Survey Date: **11 and 14 September 2015**

Visits: 2 by **Philippe Vaucher**

Comments on the survey: **without obstacle. But some documents missing.**

Access to property: **By paved road from Ilheus, Itabuna or Eunapolis. Easy access from Bueararema by asphalted road (xxx meters) then by unpaved but well maintained track (1 km).**

No. of km of paved road: .....

From: .....

No. of km of dirt road: .....**1.6 km**

From: .....

GPS localization:

Entrance:                      Latitude:        **14° nn' nn" S**  
   Longitude:     **39° nn' 16" W**

Building(s)                      Latitude:        **14° 5n' n" S**  
   Longitude:     **39° nn' 14" W**

Altitude: **from 120 to 350 m**

**(Refer to the topographical survey – appended as an annex)**

## Background and current situation

Ownership		Date	Comments
Inheritance	<input checked="" type="checkbox"/>	2014	Farm belonging to XXX family since 4 generations
Purchase	<input type="checkbox"/>		
Other	<input type="checkbox"/>		
Type of property document :			
- property title			
- CCIR, no. in land registry of INCRA			

Farm type	Number of people	Comments
Family farm <input type="checkbox"/>		
Leased land <input type="checkbox"/>		
Enterprise <input checked="" type="checkbox"/>	7	

Type of agriculture					
Conventional	<input type="checkbox"/>				
Organic certified	<input checked="" type="checkbox"/>	EU <input checked="" type="checkbox"/>	US <input checked="" type="checkbox"/>	JAS <input type="checkbox"/>	Demeter <input checked="" type="checkbox"/>
Other certifications	Rainforest <input type="checkbox"/>	UTZ <input type="checkbox"/>	Others <input checked="" type="checkbox"/>	Orgânico Brasil (BR)	
In conversion to Demeter International					

Workforce	Number of people	Employment %	Comments: contracts, etc.
family <input type="checkbox"/>			
employees <input checked="" type="checkbox"/>	6	100	Permanent contracts
partners <input checked="" type="checkbox"/>	1	100	Partnership contact (50% of production)
temporary <input type="checkbox"/>			

Neighborhood	Number	Crop type		Comments
Neighbors	7			
Boundaries	Forest <input checked="" type="checkbox"/>	Pastures <input checked="" type="checkbox"/>	Cacao <input type="checkbox"/>	Others <input type="checkbox"/>
	Others:			

Support	Institutional / Governmental	NGO	Cooperatives / Associations	Enterprise
Technical <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Administrative <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other <input checked="" type="checkbox"/>	Private person			
Type of support	Cocoa quality and organic / biodynamic			
Organization name	PHILLIPE VAUCHER, eCacaoS			

## Layout and usage of the farm

**Total superficies: 83,9434ha**

Availability of plans, maps, drawings of the farm	<input checked="" type="checkbox"/>	Date: <b>20.07.2009</b>
		Topographer: <b>XXXX, Itabuna</b>

Utilization	ha	ha	Observations
Cacao	<b>48,9161</b>		
Cacao in association (inter-cropping)			
Other crops			
Other cultivations in association			
Pastures	<b>16,7116</b>		
Forests			
Reserve, protected area, etc.		<b>17,3267</b>	<b>Legal reserve, minimum 20%</b>
Unproductive land			
Watercourse, dam, etc.			
Roads			
Infrastructures		<b>0,9890</b>	
Totals	<b>65,6277</b>	<b>18,3157</b>	

Potential to mechanize ☐

Existence of drivable paths within the property ☒

Fences		Comments	
Entirely enclosed property	<input type="checkbox"/>		
Partially enclosed property	<input checked="" type="checkbox"/>	#: 60	Pastures and cocoa areas adjacent to neighbors
Internal fencing	<input checked="" type="checkbox"/>	Divisions of pastures	
Type of fences	Wood and wire		
Fences' condition	precarious		

## Environmental description

<b>Regional climate</b>	<b>Humid</b>
	Source: Thornthwaite
Average rainfall	<b>900 to 2000 mm</b>
Dry period(s)	Number /months: <b>3/December - February</b>
Rainy period(s)	Number /months: <b>4/May-August</b>
Average sunshine	Days/year: <b>250</b>

Geomorphology	
Soil characteristics	<b>Clay soil</b>
Cacao areas	<b>Sandy – clayey</b>

Topography of cultivation areas	% Flat	% Slope	% Steep
Cacao	<b>20</b>	<b>40</b>	<b>40</b>
Other crops - pastures	<b>90</b>	<b>10</b>	

Water resources	No	Width, length, surface...
Springs	<b>1</b>	
Watercourses	<b>1</b>	
Water reservoirs, dams	<b>1</b>	<b>100m<sup>2</sup>, 2m deep</b>
Lake		
Wetlands , swamps, etc.	<b>1</b>	<b>In flat area of cocoa</b>
Water tank		

Possibility to irrigate



Possibility of hydraulic power



Possibility of solar energy (clear area(s))



orientation(S/N/W/E): **E-W**

Specific characteristics of the farm / particularities
<b>Plenty of water, compared to the neighbors (indeed, it is the fazenda that feeds by gravity 4 other farms)</b> <b>Cocoa cultivation in agroforestry (“cabruca” system).</b> <b>Farm with few grafting. Therefore has still a majority of traditional “forasteros”: Para, Parasinho, and Comum.</b> <b>Easy access and near a small urban center.</b>

## Infrastructures

Infrastructures	No.	Size		Condition
Housing				
Main House	1	72 m2 (12x6m) + 12 m2 (3x4m)		Average
Workers' house	2	60 m2 (12x5m), divided in 2 = 4 families		Average
Workers' house	1	27 m2 (6x4,5m)		Average
Others				
Technical	2	Storage under solar dryers (barça): 2x 25m2 (5x5m)		Average
Fermentation Unit				
Premises		Surface: 68,64 m2 (8,8x7,8m)	Roof type: tiles	Good
		Height: 5m + 1m of frame	Coating, walls: masonry	

Boxes		<b>Size: 3 lines: 1 x 8,5x1,2x1m ; 2 x 7,8x0,85x0,9m</b>	<b>Good</b>
		Lines <input checked="" type="checkbox"/> Gravity <input type="checkbox"/>	
		Material: <b>high-quality wood</b>	
		Height floor-boxes: <b>20 cm</b>	
		<b>cleaning, hygiene, flow from boxes: ok, draining by gravity outside fermentation unit</b>	
Access		Draft animal <input checked="" type="checkbox"/>	<b>Good</b>
		Vehicle <input checked="" type="checkbox"/>	
		Others:	
Observation		<b>Each line has sections that can be adapted to the quantity of cocoa to be fermented</b>	
<b>Drying</b>			
<b>Solar dryers</b>	3	Size: <b>50 m2 (10x5m)</b>	<b>Average</b>
		Structure: Wood <input checked="" type="checkbox"/> Metal <input type="checkbox"/> Other:	
		Roof: type (zinc, aluminum, tin, plastic, etc.): <b>zinc</b>	
		Roof: fix <input type="checkbox"/> sliding <input checked="" type="checkbox"/> other:	
		Floor: wood <input checked="" type="checkbox"/> cement <input type="checkbox"/> other:	
<b>Artificial dryer</b>		Size: <b>5,5x5m</b>	<b>Poor</b>
		Wood <input checked="" type="checkbox"/> Gas <input type="checkbox"/> Electric <input type="checkbox"/> Mixed <input type="checkbox"/>	
		Extraction <input checked="" type="checkbox"/> chimney	
		<b>Possibility of smoke</b> <input checked="" type="checkbox"/>	
Description of dryer (material used, size, etc.): old artificial dryer with steel tube... <b>Cacao beans on perforated steel plates. During the drying, cacao skins / husks separate from beans and drop on the tube where they are burnt and release smoke.</b>			
<b>Storage facility</b>		Size: <b>73,5 m2 (10,5x7m)</b>	<b>Good</b>
		Ventilation <input checked="" type="checkbox"/> humidity <input type="checkbox"/>	
		Access: Animal <input checked="" type="checkbox"/> Vehicle <input checked="" type="checkbox"/>	
		<b>Good storage area, even without direct light. Ventilation is possible through the presence of a second floor.</b>	

Flow: fermentation/drying/storage	Distance	Height difference	Difficulties
Fermentation/drying	<b>5 to 25 m</b>	<b>2 m</b>	<b>Noe</b>
Drying/warehousing	<b>10 to 35 m</b>	<b>1 m</b>	<b>Noe</b>

Energy			Public	Private	Name
Electricity grid	<input checked="" type="checkbox"/>	Distributor	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Coelba
Solar	<input type="checkbox"/>	Power cuts	<input checked="" type="checkbox"/>	Frequency of cuts: <b>seldom, as the farm is near a town</b>	
Hydraulic	<input type="checkbox"/>				
Generator	<input type="checkbox"/>				
Gas	<input type="checkbox"/>				
Biomass	<input type="checkbox"/>				
Other	<input type="checkbox"/>				
Comments:					

Water			Public	Private	Name
External water network	<input type="checkbox"/>	distributor	<input type="checkbox"/>	<input type="checkbox"/>	
		Cuts	<input type="checkbox"/>	Frequency:	
Own water network	<input checked="" type="checkbox"/>				
Running water	<input checked="" type="checkbox"/>	Gravity <input checked="" type="checkbox"/>	Pumping <input type="checkbox"/>		
Wells	<input type="checkbox"/>	Number:			
Water tanks	<input checked="" type="checkbox"/>	Number: <b>1</b>	Volume: <b>150 m3</b>		

Telecommunications		
Landline	<input type="checkbox"/>	
Mobile	<input checked="" type="checkbox"/>	Number of available operators: 3
Internet	<input checked="" type="checkbox"/>	Cable <input type="checkbox"/> Radio <input checked="" type="checkbox"/> Satellite <input type="checkbox"/>
		Number of available operators: 3
		Telephone and internet: <b>better reception if installation of a rural antennae</b>

	Energy	Water	Comments
Living quarters	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Technical premises	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Water intake nearby</b>
Fermentation	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
Solar dryers	<input type="checkbox"/>	<input type="checkbox"/>	<b>Water intake nearby</b>
Artificial dryers	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Water intake nearby</b>
Storage	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Water intake nearby</b>
Workshop	<input type="checkbox"/>	<input type="checkbox"/>	<b>Water intake nearby</b>
Stables	<input type="checkbox"/>	<input type="checkbox"/>	
Paddock	<input type="checkbox"/>	<input type="checkbox"/>	<b>Water intake nearby</b>
Garage	<input type="checkbox"/>	<input type="checkbox"/>	
Others....	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	

Waste water treatment		type: septic tank, sump, biodigester, etc.
Living quarters	<input checked="" type="checkbox"/>	<b>Septic tank</b>
Technical premises	<input type="checkbox"/>	

Infrastructure's weaknesses	
Fermentation	Internal volume too big, too ventilated. No proper roof. Significant loss of heat.
Drying	To change. Infrastructure in bad condition, Probable leakage if heavy rains.
Storage	Insufficient ventilation?
Others ...	

Equipment available		
Type	Number	Brand, condition
Brushcutter		

Chainsaw	1	Stihl, 380
Generator		
Sprayer	1	Stihl, SR430
Pump		
Tractor		
Vehicle		
Other:		

## Plantations

### Cacao

Total area of cocoa plantation (ha): <b>48.91</b>			
Number of plots : <b>8</b>	Average area (ha): <b>6</b>		Density/ha: <b>594</b>
	Main variety: <b>forasteiro</b>		Age (date of plantation): <b>25-30 years</b>
	<b>14 ha have been partially grafted around 10 years ago, with various clones. Clones not very productive and with declining resistance to witch broom</b>		
	Shading: <b>forest tree (cabruca)</b>		Average luminosity (%): <b>40</b>
	Forest <input checked="" type="checkbox"/>	Wood <input type="checkbox"/>	Associated crops <input type="checkbox"/> Others <input checked="" type="checkbox"/>
	Associated crops: <b>tall fruit trees: jackfruit (Artocarpus heterophyllus), Caja (Spondias mombin), jenipapo (Genipa americana), orange (Citrus sinensis)</b>		
	Current production (kg/ha): <b>300</b>		
Plot 01 (Name): <b>Gustavo</b>	Area (ha): <b>10.4</b>		Density/ha: <b>677</b>
	Main variety: <b>forasteiro</b>		Age (date of plantation): <b>25-30 years</b>
	Shading: <b>forest (cabruca)</b>		Average luminosity (%): <b>40</b>
	Forest <input checked="" type="checkbox"/>	Wood <input type="checkbox"/>	Associated crops <input type="checkbox"/> Others <input checked="" type="checkbox"/>
	Associated cultures: <b>large fruit trees: jackfruit (Artocarpus heterophyllus), Caja (Spondias mombin), orange (Citrus sinensis)</b>		
	Current production (kg/ha):		
Plot 02 (Name): <b>Roça Velha</b>	Area (ha): <b>7.8</b>		Density/ha: <b>602</b>
	idem		
	Current production (kg/ha)		
Plot 03 (nom): <b>Planície</b>	Area (ha): <b>5.2</b>		Density/ha: <b>786</b>
	idem		

	Current production (kg/ha)	
Plot 04 (nom): <b>Mizael</b>	Area (ha): <b>5,2</b>	Density/ha: <b>788</b>
Plot 05 (nom): <b>As 6</b>	Area (ha):: <b>2,6</b>	Density/ha: <b>631</b>
Plot 06 (nom): <b>As 4</b>	Area (ha):: <b>1,7</b>	Density/ha: <b>641</b>
Plot 07 (nom): <b>Lagedinho</b>	Area (ha):: <b>11,3</b>	Density/ha: <b>685</b>
Plot 08 (nom): <b>Roçadaõ</b>	Area (ha):: <b>5,2</b>	Density/ha: <b>806</b>

Evaluation of the plantations (by plots)			
<b>Soil</b>			
Soil cover:		Diversity: <b>good, confirming the organic cultivation since 5 years.</b>	
Brushing	Chemical <input type="checkbox"/>	Manual <input checked="" type="checkbox"/>	
Cases of degradation <input type="checkbox"/>	Cases of erosion <input type="checkbox"/>	Damages by insects <input checked="" type="checkbox"/> :	
		Types (ants, termites, etc.): <b>ants</b>	
		effects: <b>very small</b>	
<b>Cacao</b>			
Density (m x m): <b>3x3m</b>			
Average height: <b>3-4m</b>		Type of pruning (shape): <b>cup</b>	
Average area per tree (m <sup>2</sup> ): 9		Intertwining of trees <input checked="" type="checkbox"/> Description: <b>the whole farm goes under a drastic pruning since 2 years, with a lowering of the tree heights and reduction of branches intertwining</b>	
Location of pods	Trunk <input checked="" type="checkbox"/> %: <b>40</b>	Branches <input checked="" type="checkbox"/> %: <b>60</b>	
	Average number of pods: Yearly: <b>50</b> At time of visit: <b>10</b>		
<b>Shade</b>			
Type: <b>trees (wood) and fruit trees</b>	Average height: <b>15-20m</b>	Density (ha) or distance between trees: <b>25m</b>	
Average height cacao /shade: <b>10-15m</b>			
Possibility of trimming <input type="checkbox"/>			
<b>Presence of diseases</b> <input checked="" type="checkbox"/>	Type(s): <b>witch broom (moniliophthera pernicios)</b>		% plants affected: <b>10 %</b>
<b>Incidence concentrated mainly in the flat and humid zone of the farm (near a stream)</b>			
<b>Presence of damages by pests, animals</b> <input checked="" type="checkbox"/>	<ul style="list-style-type: none"> <li>- Insects: <b>ants, little impact</b></li> <li>- Rodents:</li> <li>- Others:</li> </ul>		



Inputs used	Name / commercial name	Method of application	Period	Quantity/ha
Brushing				
Insecticide				
Fungicide				
Fertilizers				

Production per plot (05 years) kg/ha							Production growth +/-	% of total production
	2014	2013	2012	2011	2010	2009		
Plot 01								
Plot 02	No data per plot							
Plot 03								
<b>Total</b>	<b>15 840</b>	<b>14 340</b>	<b>10 500</b>	<b>8 790</b>	<b>16 200</b>	<b>12 990</b>		

Associated crops		
Type	Number of plants / areas cultivated	Annual output (kg)
Jackfruit	Scattered over all plots	2000
Caja	276, scattered over all plots	3000
Jenipapo	Scattered over all plots	500
Orange	Along the carriage way crossing the farm	500

## Harvesting & Post-harvest processing

Harvesting (total cocoa area)		
Main harvest(s) <input checked="" type="checkbox"/>	Number: <b>5-6</b>	Duration: <b>30 days</b>
Period(s): <b>September - February ("safra")</b>		
Mid- harvest(s) <input checked="" type="checkbox"/>	Number: <b>6</b>	Duration: <b>30 days</b>
Period(s): <b>March - August ("temporão")</b>		
Average number of days – main crop: <b>30</b>		
Pods opening: <b>12</b>	In the plantations <input checked="" type="checkbox"/>	Infrastructure <input type="checkbox"/>
Average number of days – mid crop: <b>30</b>		
Pods opening: <b>12</b>	In the plantations <input checked="" type="checkbox"/>	Infrastructure <input type="checkbox"/>
Average quantity – main crop (kg): <b>600</b>		
Average quantity – mid crop (kg) (kg): <b>450</b>		
Number of days between picking and pod breaking: <b>2 to 6</b>		

Transport		
Transport:	Animal <input checked="" type="checkbox"/>	Vehicle <input type="checkbox"/>
Draft animals	Type: <b>mules</b>	Number: <b>4</b>
Available pastures, in ha: <b>16,71</b>		

Fermentation		
Fermentation in the farm?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
For which %: <b>70</b>		
Fermentation outside the farm?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>
Where? Who?	For which %:	
Type of relationship:		
Distance:	Km:	Number of hours:
Premises available <input checked="" type="checkbox"/>	In the plantation <input type="checkbox"/>	Type: <b>wooden boxes</b>
No. of boxes: <b>&gt;20, adjustable to cocoa quantity</b>	Size (m): <b>8x1x1, 3 lines</b>	Material: <b>wood</b>
Average fermentation time (days): <b>6</b>		
Number of turning: <b>5</b>		

Drying	
Solar <input checked="" type="checkbox"/>	Average duration: <b>6 to 7 days</b>
Artificial <input checked="" type="checkbox"/>	Average duration: <b>3 days</b>
<b>Organic high-quality cacao is never dried artificially (risks of smoke).</b>	
« coupling » of drying methods	Description:
Solar	Average duration:
Artificial	Average duration:

Storage				
Description:	<b>Big storage room with walls and floor covered by</b>			
Ventilation:	<b>Only one window. A second level allows for slight ventilation.</b>			
Trace:	Humidity (molds) <input type="checkbox"/>	Rodents <input type="checkbox"/>	Insects <input type="checkbox"/>	Others:
Average duration of storage		<b>1 week maximum</b>		
<b>Due to the value of cocoa, the production is kept as little time as possible in the farm (risk of theft).</b>				

Commercialization		
Direct selling <input checked="" type="checkbox"/> <b>30 %</b>	Intermediary / agent <input checked="" type="checkbox"/> <b>70 %</b>	Other <input type="checkbox"/>
Association, cooperative <input checked="" type="checkbox"/>		
At the farm <input type="checkbox"/>	Delivery <input checked="" type="checkbox"/>	Distance (km): <b>60</b>

Average price of cocoa	Currency: Real (BR)
2015	<b>135.00</b>
2014	<b>115.00</b>
2013	<b>105.00</b>

## Other crops and activities

Parallel cultivation		
Type(s)	Number of plants / area cultivated	Yearly production (kg)

Crop residues (biomass) <input type="checkbox"/>	
Origin:	Quantity (kg/m <sup>3</sup> )
Possibility to compost <input type="checkbox"/>	Yearly production (kg/m <sup>3</sup> )

Forestry		
Type(s)	Number of plants / area cultivated	Yearly production (kg)

Livestock			
Type(s)	Heads of livestock	Feed	Yearly production (kg)
<b>Oxen and cows</b>	<b>20-30</b>	<b>pastures</b>	
<b>The farm is currently renting its pastures: R\$ 35.00/head/month</b>			
Livestock feed:			
Pastures:	Available ha:		
Other crops:	Cultivated ha:		
Maximum capacity: <b>30-35</b>			
Availability of manure <input type="checkbox"/>	Quantity (kg/m <sup>3</sup> ):		

Fish farming <input type="checkbox"/>		
Type(s) of fish:		
Number of fish ponds:	Surface (m <sup>2</sup> )	
Feed:	From the farm <input type="checkbox"/> : %	Bought <input type="checkbox"/> : %

Poultry	Type	Heads
Feed:	From the farm <input type="checkbox"/> : %	Bought <input type="checkbox"/> : %

Other breeding	Type	Heads
Feed:	From the farm <input type="checkbox"/> : %	Bought <input type="checkbox"/> : %

## Labor force

	Number	ha/worker
On the farm	<b>7</b>	<b>6,98</b>
Cacao	<b>7</b>	<b>6,98</b>
Other crops / activities		
Pastures require a minimum of workforce: repairing fencing, cleaning, etc.		

Type	Number	Contract type	% activity
Administrator(s) / manager	<b>1</b>	<b>Permanent</b>	<b>100</b>
Team leader(s)			
Farm workers	<b>5</b>	<b>Permanent</b>	<b>100</b>
Seasonal laborers			
Day laborers			
Partner(s) / Sharecropper(s)	<b>1</b>	<b>50% of the production on its area / formal contract</b>	<b>Free/100</b>

See assessment of each employee in appendix

## Organic certifications(s)

Already certified?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Last use of chemicals	Year: <b>2005</b>	
	Type(s) of product:	Quantities
	<b>?</b>	<b>?</b>
Conventional neighbors	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
	Planted barrier	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
	Type: <b>forest</b>	
Possibility to reduce conversion time	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Potential buyers	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
	Who? <b>CABRUCÁ cooperative, members of XYZ family, with point of sale in Rio de Janeiro</b>	

## Current economic viability

Revenue (Real, BR)	2013	2014	>08.2015
Cacao			
Other crop(s) / activities			
- Renting of pastures			
-			
-			
<b>Expenses</b>			
Labor			
Inputs			
Maintenance			
Taxes			
Others, Miscellaneous			
Investments carried out this year:			
-			

Average price of cocoa	Currency: Real (BR) Per kg
2015	9.00
2014	7.66
2013	7.00

Average price other crops	Currency: Real (BR) Per head / month
2015	R\$ 35.00
2014	R\$ 30.00
2013	R\$ 25. 00

Evolution (in %)	2013/2014	2014/2015	2015/2016
Income			
Expenses			

Sources for the figures				
Producer <input checked="" type="checkbox"/>	Invoices <input type="checkbox"/>	Financial reports <input type="checkbox"/>	Tax returns <input type="checkbox"/>	Others:

## SWOT

Strengths	Weaknesses
<p>Favorable region for cocoa plantation: good soils, ideal pluviometry</p> <p>Close to an urban center</p> <p>Has the necessary infrastructures</p>	<p>Some poor to average infrastructures</p>
Opportunities	Risks
<p>Excellent:</p> <p>After rehabilitation of the orchard (pruning, shade, increase of tree density), simple fertilization should increase the production considerably</p>	<p>Labor costs are high in Brazil (with 55% of social charges on top of the minimum wage)</p>

## Value estimation of the property

Reais (BR)	Bracket	Comments
Average value in the region per ha (bare land)		
Regional for cacao		Variable, depending on age of plantations, conditions, etc.
Regional for pastures		
Regional for other crops		
<b>Property</b>		
Ha cacao 48,91		
Ha pastures 16,71		
Ha others		
Ha forests, woods, etc. 17,31		
Infrastructure		
Others: machines, tools		
Debts, mortgages		
Other liabilities		
<b>Total estimated</b>		

## Action plans

### A Minima (Status quo)

Cocoa plantations	Yes	No	Comments
Maintaining the staff structure	<input type="checkbox"/>	<input type="checkbox"/>	
Increase of labor force	<input checked="" type="checkbox"/>	<input type="checkbox"/>	01 employee more or 02 if the partner leaves
Change of agricultural practices	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Practices to prioritize	<input checked="" type="checkbox"/>	<input type="checkbox"/>	pruning
Inputs (fertilizers, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Manure and / or rock flour

Infrastructures	Yes	No	Comments
Minimum of maintenance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Necessary construction(s)	<input type="checkbox"/>	<input type="checkbox"/>	
Necessary repair(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Maintaining the buildings
Tools / Equipment purchase(s)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Other improvement(s)	<input type="checkbox"/>	<input type="checkbox"/>	

### To prioritize

Agricultural Practices	Yes	No	Observations
Brushing	<input type="checkbox"/>	<input type="checkbox"/>	
Trimming / pruning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Harvest	<input type="checkbox"/>	<input type="checkbox"/>	
Pods opening	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Separate ripe from unripe and diseased
Transport	<input type="checkbox"/>	<input type="checkbox"/>	
	<input type="checkbox"/>	<input type="checkbox"/>	
Post-Harvest			
Fermentation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Organic and fine cocoa
Drying	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Organic and fine cocoa
Warehousing	<input type="checkbox"/>	<input type="checkbox"/>	
Sale	<input type="checkbox"/>	<input type="checkbox"/>	

Maintaining of other crops	Yes	No	Comments
Renting pastures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Pays 1 employee and allow for a minimum of maintenance of the infrastructures

Investment(s) Real (BR)	Year 1	Year 2	Year 3	Year 4
Cacao				
Infrastructures				
Labor				
Other crops				
Other				

Monitoring and evaluation of action plan	Frequency	Delivery
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Production reporting <input checked="" type="checkbox"/>	Weekly <input type="checkbox"/> Monthly <input checked="" type="checkbox"/> Other <input type="checkbox"/> :	Written report <input checked="" type="checkbox"/> Accounting <input checked="" type="checkbox"/> Other <input type="checkbox"/> :
Visits <input checked="" type="checkbox"/>	Weekly <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Other <input type="checkbox"/> :	Written report <input checked="" type="checkbox"/> Accounting <input type="checkbox"/> Other <input type="checkbox"/> :

Financial investment ( Real BR)		%
Self-financing		
External financing (minimum)		

## Gradual improvement

### Objectives and strategy

Quality <input checked="" type="checkbox"/>	Quantity <input checked="" type="checkbox"/>	Certification <input checked="" type="checkbox"/>	Other ...
		<b>Biodynamic and others</b>	

Plantations de cacao	Yes	No	Comments
Maintaining the staff structure	<input type="checkbox"/>	<input type="checkbox"/>	
Increase of labor force	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>01 per year</b>
Change of agricultural practices	<input type="checkbox"/>	<input type="checkbox"/>	
Practices to prioritize	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>pruning</b>
Introducing other varieties	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Work with all varieties</b>
Increase density	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Steady increase up to 1000 trees/ha</b>
Increase surface	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Inputs (fertilizers, etc.)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Organic, mainly rock flour</b>
Mechanization	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Step by step: dispense with animals</b>

Infrastructures	Yes	No	Comments
Maintenance	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Repairs	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Maintenance of existing infrastructures</b>
Enhancements	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Change roofs of solar dryers, build a proper roof in the fermentation room</b>
Modification(s), acquisition(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Depending on the growth of the production</b>
Replacement(s), acquisition(s)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<b>A "modern" artificial dryer (wood), without smoke A small tractor, mainly to transport cocoa and inputs</b>



Agricultural practices	Yes	No	Observations
Brushing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Pruning	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Grafting	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Harvest	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Separate ripe pods from unripe and diseased
Pods opening	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Separate ripe pods from unripe and diseased
Transport	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Create drivable tracks in the cocoa plots
Inputs: fertilization,	<input type="checkbox"/>	<input type="checkbox"/>	
Irrigation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Modification of vegetal cover	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Supplementary crops/Activities	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Introduce own cattle (revenue) and use manure in the cocoa plantation
<b>Post - Harvest</b>			
Fermentation	<input checked="" type="checkbox"/>	<input type="checkbox"/>	01 employee dedicated to fermentation and drying
Drying	<input checked="" type="checkbox"/>	<input type="checkbox"/>	"
Transformation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Warehousing	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Sale	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Maintaining of other crops	Yes	No	Comments
Pastures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Investment:			
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Stable, milking, biodigester (slurry), composting area (manure) and other organic / biodynamic preparations

Diversification	Yes	No	Comments
	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Monitoring and evaluation of action plan	Frequency	Delivery
Production reporting <input checked="" type="checkbox"/>	Weekly <input type="checkbox"/> Monthly <input checked="" type="checkbox"/> Other <input type="checkbox"/>	Written report <input checked="" type="checkbox"/> Accounting <input checked="" type="checkbox"/> Other <input type="checkbox"/>
Visits <input checked="" type="checkbox"/>	Weekly <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Other <input type="checkbox"/>	Written report <input checked="" type="checkbox"/> Accounting <input type="checkbox"/> Other <input type="checkbox"/>

Investment(s)	Year 1	Year 2	Year 3	Year 4
Cacao				
Infrastructures				
Labor				
Other crops				
Diversification				
Others: drivable paths, purchase of a tractor				

Financial investment ( Real BR)	%
Self-financing	
External financing (minimum)	

## Annex: map & pictures



## Annex: evaluation of labor force, per employee

**Name: Carlos**

Seniority in the farm		2 years		Marital status		Married <input checked="" type="checkbox"/> Widow <input type="checkbox"/> Bachelor <input type="checkbox"/>	
No. of children	3	At school		0			
Domiciled		At the farm <input checked="" type="checkbox"/>		Outside <input type="checkbox"/>			
Salary: R\$ 1'200,00		Benefits		Housing <input checked="" type="checkbox"/>			
				Meals <input type="checkbox"/>			
				Transport <input type="checkbox"/>			
				Other <input type="checkbox"/>			
Legal liabilities (provision for retirement, etc.)		2 years					
<b>Evaluation</b>							
Punctuality: good		No of absences: 0		Health / Handicaps: hips problems			
Readiness for extra hours <input checked="" type="checkbox"/>							
Technical skills:		Brushing <input checked="" type="checkbox"/>		Pruning <input checked="" type="checkbox"/>			
		Harvest <input checked="" type="checkbox"/>		Animal transport <input checked="" type="checkbox"/>			
		Fermentation <input checked="" type="checkbox"/>		Drying <input checked="" type="checkbox"/>			
		Others: grafting of cocoa ; cattle rearing					
Training received:		Where, when...					
- Grafting of cocoa trees		CEPLAC					
- Cattle rearing		CEPLAC					
- Biodynamic		CABRUCA					
Use of equipment / tools		Chainsaw, brushcutter					
Overall assessment		Productivity		Average			
		Quality of work		Good			
		Social behavior		authoritarian			

**X2**

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