



Photo from Microsoft Stock Images

12/6/2026

Eleonora Escalante Strategy  
presents  
the Summer Saga of the year

*Cacao and Coffee 101.*  
*Success strategies for Small Farm Holders*

Episode 4.  
Sustainability: Beyond caring for  
the land. Part 2

[www.eleonoraescalantestrategy.com](http://www.eleonoraescalantestrategy.com)

# Cacao and Coffee 101.

## Success Strategies for Small Farm Holders



### Outline Calendar

One Season: From May 22<sup>nd</sup> to September 11th, 2026

<p>22-May Episode 1 </p> <p>Introduction </p>	<p>29-May Episode 2 </p> <p>A new philosophy beyond circular economy </p>	<p>5-June Episode 3 </p> <p>Sustainability: Beyond caring for the land Part I </p>	<p>12-June Episode 4 </p> <p>Sustainability: Beyond caring for the land Part II </p>	<p>19-June Episode 5</p> <p>New Models of Ownership &amp; Corporate Governance </p>	<p>26-June Episode 6</p> <p>Customer Segments </p>
<p>3-July Episode 7</p> <p>Value Propositions I </p>	<p>10-July Episode 8</p> <p>Value Propositions II </p>	<p>17-July Episode 9</p> <p>Distribution Channels </p>	<p>24-July Episode 10</p> <p>Certifications Quality Control </p>	<p>31-July Episode 11</p> <p>Key Resources </p>	<p></p> <p>1-9 August Annual Holiday to Honor San Salvador the Divine Savior of the World</p>
<p>14-August Episode 12</p> <p>Revenue Streams Cost Structure </p>	<p>21-August Episode 13</p> <p>Competitiveness, Research &amp; Innovation </p>	<p>28-August Episode 14</p> <p>Financing &amp; Access to Capital </p>	<p>04-September Episode 15</p> <p>Key Partnerships </p>	<p>11-September Episode 16</p> <p>Epilogue Summary Conclusions Research Agenda </p>	<p></p> <p>Next saga: Human Talent: From Feudal Slaves to Digital Beggars. As of October 1<sup>st</sup></p>

12/6/2026



*This outline is subject to change if the author considers it appropriate for your learning experience.*

Eleonora Escalante Strategy

State of the Art Corporate Strategy  
All rights reserved. Copyright 2016-2026




# Cacao and Coffee 101. Success Strategies for Small Farm Holders


## Sustainability: Beyond caring for the Land Part II

### AGENDA

Cacao and Coffee 101. Success Strategies for Small Farm Holders

1. Coffee and Cacao common key sustainable factors	Last week Part I 
2. A new design of supply value chain	
3. Caring for all the stakeholders	
4. Caring for the land and the crops	This week
5. Caring for the society	



 Photo Source:  
<https://www.worldbank.org/en/news/feature/2017/12/19/forest-and-farmer-friendly-cocoa-in-west-africa>

# Cacao and Coffee 101.

## Success Strategies for Small Farm Holders



### Sustainability: Beyond caring for the Land Part 2

#### Caring for the land and the crops.

Sustaining the land for the crops of Cacao and Coffee implies a process of 4 steps:

1. **Awakening** of the farmers through promotion, education and training campaigns.
2. **Consciousness** about the problem of the land sustainability and climate change.
3. **Access to capital:** Farmers without access to financing are unable to care properly for the land
4. **Take action strategically:** Climate change effects must be mitigated with a long-term vision

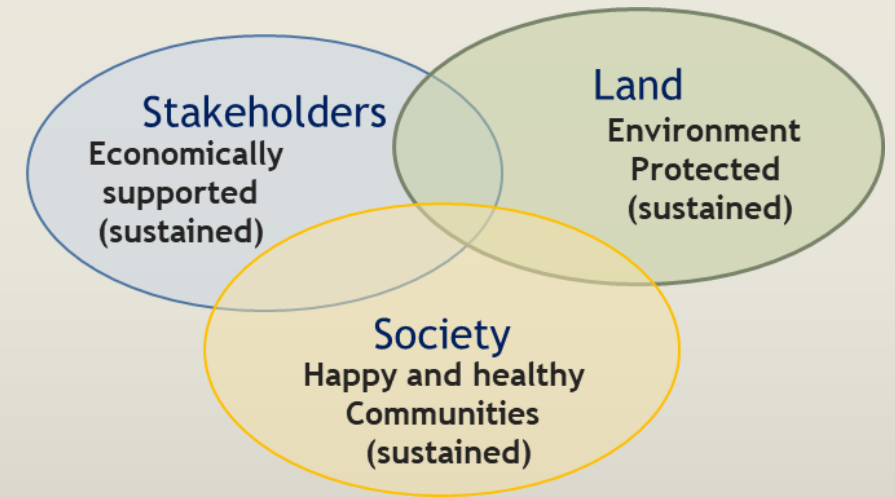


**COFFEE**



**CACAO**

- Several sustainability standards and certifications have been developed to help the farmers in different land-climate initiatives: agroecology programs, ensuring environmentally sustainable practices, regenerative agriculture, soil health measurement, reduction of pollution, waste management, and improvement of the yields-landscape, etc. The main strategic cornerstone has been by and through the certifications.
- Most of the initiatives started as a mitigation risk for bean standards coming from the midstream players.
- It was a quasi-voluntary enforcement to the upstream primary industries, coming from the pressure of the midstream players (the European and American main importers of the green beans) around the 1990s.
- The enforcement was to push the planters to improve their processes through the certifications.
- The most important certifications are Fairtrade, Rainforest Alliance/UTZ, US Organic, 4C, Bird Friendly Smithsonian. In El Salvador, the Blue Harvest has been also rolled out.
- Multinational Corporations have also installed guidelines to all their main suppliers of beans as the Starbucks C.A.F.E. Practices, and the Nespresso AAA Sustainable Quality™ Program for coffee and the Nestlé Cocoa Plan for cocoa. These are supplier sourcing and verification programs specifically designed by MNCs which are trying to comply with the United Nations SDGs.

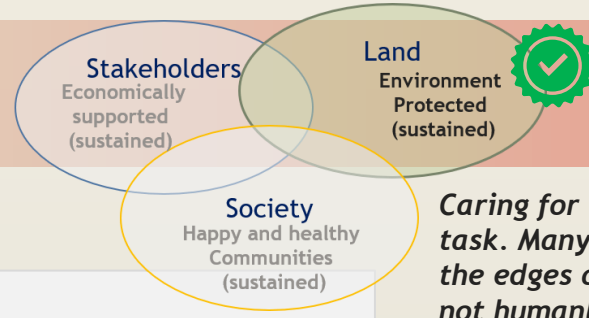


**Sustainability is a complex corporate strategy with three dimensions (1) stakeholders, (2) land-environment, and (3) society well-being. To include it at the core, requires multiple key performance indicators at each of the levels of the value chain: Upstream, Midstream, and Downstream. The synchronization of all the sustainability efforts will pay off particularly in the tropical belt nations that need to overcome poverty.**

All the references cited and used for our inferences are shown in slide 12-13

# Cacao and Coffee 101.

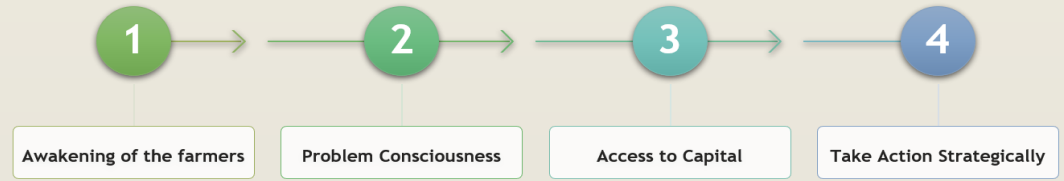
## Success Strategies for Small Farm Holders



### Sustainability: Beyond caring for the Land Part 2

#### Caring for the land and the crops.

Sustaining the land for the crops.  
Agriculture & Environment factors of the land.



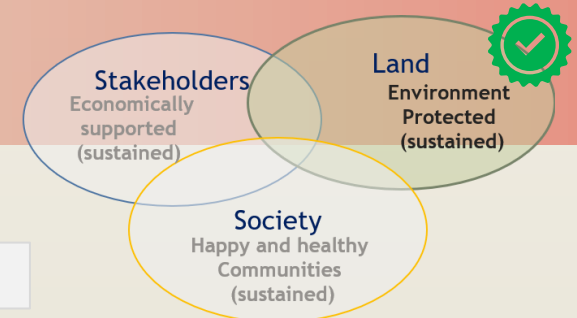
*Caring for the land of both crops is not an easy task. Many farmers have not been informed of all the edges of the problem. Climate conditions are not humanly manageable without the global compliance of environmental regulations. However, the effects of climate change in your farm can be prevented and mitigated properly.*

<p><b>01</b> <b>Environment regulations and compliance</b></p> <p>Each nation of the tropical belt with these crops must design and create an environmental legislation for its enforcement. It must address the issue of lack of efficiency, excessive costs of regulatory practices vs benefits, and lack of structured incentives for the farmers.</p>	<p><b>02</b> <b>Air Quality Control</b></p> <p>Control of the gas emissions and other sources of air pollution. This factor is the one that has been promoted largely because of the GHG as a cause of global warming. Though, the quality of the air is also affected by NO2, dust, smoke, vapor, fumes or others air rural contaminant particles.</p>	<p><b>03</b> <b>Moisture Control</b></p> <p>Moisture control is a factor related to soil management of each specific farm analysis. In here, the impact is measured through the soil-water interactions that affect the yields when the water penetrates the soil, solving the following problems: restricted infiltration, high evapotranspiration, deep drainage of rainwater in the specific farm and restricted rooting.</p>	<p><b>04</b> <b>Rainfall and Stormwater management</b></p> <p>Practical environmental engineering to solve the issue of rainfall runoff of the whole hydrological basin. It contains a whole regional basin onsite infiltration and detention system, collection and water carrying from the villages and its roads, regional flood control and major stream channel improvements.</p>	<p><b>05</b> <b>Waste Residual Management</b></p> <p>Both crops at the upstream level require a well-designed waste management system for ALL the residuals of the upstream process: the mucilage pulp, shells, husk pods, and others. The 9R circular economy is applied. There are countless possibilities still not discovered yet.</p>	<p><b>06</b> <b>Soil Management</b></p> <p>The soil is the core foundation of the plantations. Exhausted soils without organic nutrients for the fruits affect the yields, the flavor and the possibility for value added and differentiation of the beans when sold. Soil structure is always linked to water drainage mgmt. Exhaustion of soils is a huge issue for the future.</p>	<p><b>07</b> <b>Sunlight/ shade Management</b></p> <p>Farmers must avoid the fallacy that plantations with direct sun (no shade) offer higher yields. It has been demonstrated that the multilayered combination of trees offering partial shade from other species produces blends of blissful pods and coffee cherries. If the trees are happy, their fruits are flavorful!</p>	<p><b>08</b> <b>Temperature Management</b></p> <p><b>For Cacao:</b> Best altitude: 30-1000 m.a.s.l. Max yields: 500-700 m.a.s.l. High quality flavor: 800-1300 m.a.s.l. <b>For Coffee:</b> Best altitude: 1,100 to 2,000 m.a.s.l. Max Yields: depend on the variety. 600 to 1100 m.a.s.l. High quality flavor: 1500 to 2000 m.a.s.l. and more. How to keep the optimum temperature facing warming/cooling extremes?</p>	<p><b>09</b> <b>Wind mitigation</b></p> <p>Coffee and cacao as perennial woody trees of 1.5 to 2.5 meters average might need to control the temperature of the wind and its velocity in times of <b>flowering</b>. This is the moment when number of pods or cherry coffee grains per land area is established. A wind/air temperature strategy for max. flowering is required.</p>	<p><b>10</b> <b>Matching the variety with the right land</b></p> <p>Matching the yield potential in kg/ha of beans has always been the driver of planters. However, if the value proposition of the planter is in specialty niches, the match is driven by other variables beyond the functional values. If small farmers will serve specialty differentiation strategy, the KPI is not the yield anymore but its quality/ excellence.</p>
---	---	--	--	--	---	---	---	---	--

All the references cited and used for our inferences are shown in slide 12-13

# Cacao and Coffee 101.

## Success Strategies for Small Farm Holders



### Sustainability: Beyond caring for the Land Part 2

#### Caring for the land and the crops.

Sustaining the land for the crops of Cacao and Coffee. The new project economics by creating new values for coffee.



Caring to sustain the land implies to invest continuously for a positive return on equity (ROE). It also implies to philosophically rethink in the product that farmers are selling. The re-conception of the product will guide the small-farmers to shift from low-cost to a differentiation strategy.

- Each small farmer is required to understand the financial scope of their land and trees.
- At the corporate strategy level, the only “way” that a small farm-holder could raise its income is by shifting from a generic “low-cost strategy” to sell the beans at an international pricing to the broker intermediaries’ to a “differentiation strategy”.
- The small-farmers of the tropical belt are required to associate under a “tropical global guild”, or at least under “national or regional coffee guilds” to design a new corporate strategic plan for their coffee trees. It requires to fix a big philosophical and conceptual mistake that is dragging them value.
- At least one nation is required to do it, to establish the benchmarking globally. This applies to cacao and coffee small farmers.
- The reference is to create what the French did in the 1930s with the wine.



**AOC**

*With the terroir, France designed a detailed system of regulations known as “Appellation d’origine Controlée” (AOC).*

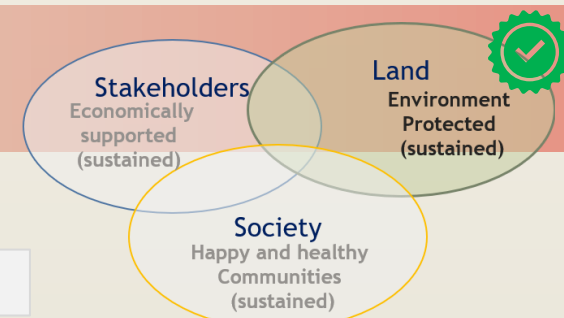
*Creating a cultural value of uniqueness for coffee and cacao by micro-regions of origin, is the only solution to dignify the profession of small farmers as coffee and cacao growers for the world. Without a differentiation strategy, small-farmers won’t be able to segment and rise the value of their coffee. It is a huge shift ahead.*

- **Terroir:** The French word assigned to a particular “region” with all its key performance unique factors. Two general definitions below:
- According to the UNESCO, the terroir is a delimited geographical space defined by a human community that, throughout its history, has built a set of distinctive cultural traits, knowledge and practices, based on a system of interactions between the natural environment and human factors.
- According to the Museum of Natural History of France, terroir is therefore a region (territory) from which a typical agricultural production (crops, livestock) emanates, resulting from the unique conjunction of cultural factors (techniques and know-how) and natural factors (geology, soil science, climate, exposure, microbiology).
- In one phrase, the terroir is a fundamental concept that tells us about a regional territory that determines the quality of the crop.

All the references cited and used for our infrences are shown in slide 12-13

# Cacao and Coffee 101.

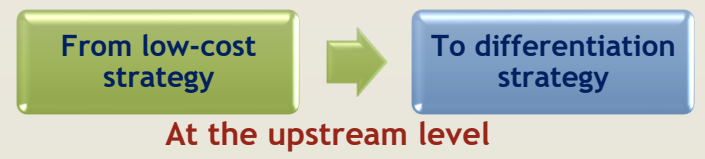
## Success Strategies for Small Farm Holders



### Sustainability: Beyond caring for the Land Part 2

#### Caring for the land and the crops.

Sustaining the land for the crops of Cacao and Coffee. Explaining how the French dignified their wine to add economic value, obtain profits for sustaining their land.



- The French system of AOC was a national project, an economic priority for the wine industry after the world depression of the 1930s. At that time there were millions of people unemployed, in a period where the economic crisis was global.
- The French grape growers (vignerons) created the AOC system through the INAO in 1935.



### AOC

With the terroir, France designed a detailed system of regulations known as "Appellation d'origine Controlée" (AOC).



Wine label source <https://www.wine-searcher.com/wine-label-france>



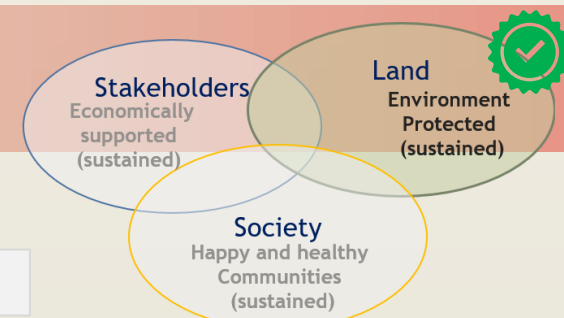
If the shift from low-cost to differentiation strategy doesn't occur, it will be impossible for the small-farmers to rise the value of their coffee and cacao harvests. Without rising the value at the UPSTREAM phase, the costs associated to care for the land properly, can't be covered by small farmers, and the cycle of scarcity will continue, leaving the workers as low-class citizens.

Appellation d' Origine Controlée (1935) for France	These variables apply for wines. For cocoa and cacao beans, the variables must be designed.
Area of production	Geographic region
Variety of the grape	Each region has permission for a specific set of varieties in regulated proportions
Yield per hectare	There is a regulation for a basic yield per year for each variety-region
Vineyard practices	How and when the vines are pruned, type of cutting, and irrigation are also regulated.
Degree of Alcohol	Minimum and maximum levels
Winemaking practices	Each winemaker holds its own practice, and these are regulated.
Tasting and Analysis	Chemical analysis for taste test
Varietal Labeling	The name of the varieties.

All the references cited and used for our inferences are shown in slide 12-13

# Cacao and Coffee 101.

## Success Strategies for Small Farm Holders



### Sustainability: Beyond caring for the Land Part 2

#### Caring for the land and the crops.

Sustaining the land for the crops of Cacao and Coffee. Explaining how the French dignified their wine to add economic value, obtain profits for sustaining their land.

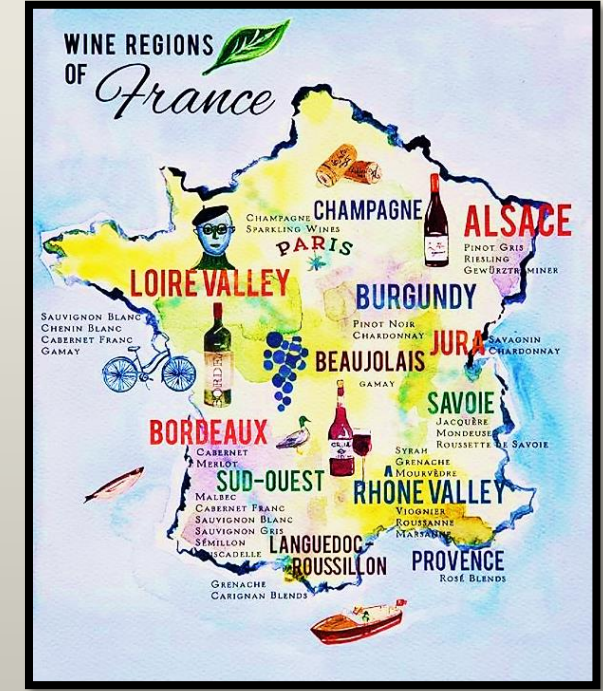


The French system to categorize its production of wines was not automatic. It took them efforts, years, in the middle of two world wars. In consequence, it is possible for the coffee and cacao small planters to create a uniqueness system of classification of the beans, because each terroir for regions and subregions is different in each nation of the tropical belt.

- It is important to acknowledge that an AOC strategy for the coffee and cocoa beans is not only to label a Geographical Indication (GI), or Certification of Origin (CO) at a private level. It is a STATE project, with government funds that helped to leverage the value of the beans with clear and regulated standards of quality.
- The beans are packed and must be clearly identified with the main variables that offer a unique taste of origin, because of the unique terroir of the coffee trees or the cacao orchards. In one same region, there are different soils, different varieties, different yields, and different micro-climates. In consequence, the shift is to raise the value of the green beans of coffee or the cacao beans, with a uniqueness or differentiation strategy based on the terroir of each category of beans.
- AOC clear rules, regulation and compliance is the key success factor for the AOC strategy. By adopting it at the upstream level, the small farmers are also on duty to care for the terroir of their trees. By caring for the terroir, the same farmers are caring for the land, their employees' salaries, themselves and all the environmental aspects of their commitment to the crops.
- The AOC project applied to the coffee and cacao beans will permit to raise their value, leaving behind the old "international brokerage system of coffee or cocoa as an ordinary commodity". Additionally, the midstream corporations are obliged to buy the beans with a premium, that will help the upstream to improve their revenue stream.



With the terroir, France designed a detailed system of regulations known as "Appellation d'origine Controlée" (AOC). This system can be applied to the coffee and cacao beans at the upstream, designed for their own variables.



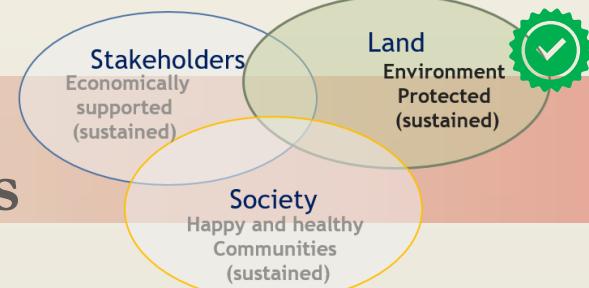
Wine regions of France: Painted by Nancy Nikko <https://www.amazon.com/dp/B07MY9BWFK>

All the references cited and used for our inferences are shown in slide 12-13

12/07/2020

# Cacao and Coffee 101.

## Success Strategies for Small Farm Holders



### Sustainability: Beyond caring for the Land Part 2

#### Caring for the land and the crops.

Sustaining the land for the crops of Cacao and Coffee. The diversification of excellent varieties at terroir level will open an immense world of opportunities, if farmers are innovative enough to tame and mitigate climate change-global warming. The role of the state is crucial for it.



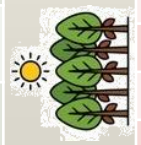
At the upstream level

COFFEE



Existing variables of classification (World Coffee Research)	
Country of release	Year of first production
Content of mucilage of the cherry	Type of soil nutrition (compost, fertilizer, etc.)
Bean size	Time of ripening
Level of resistance against fungus	Ratio of cherry to green bean out-turn
Level of resistance against nematodes	Planting density of the farm
Susceptibility to borers	Leaf tip color
Stature	Type of Variety
Genetic Description	Lineage
Breeder	Multilayered trees
Hydro stress	Temperature min-max harvest
Soil description	Quality of flowering
Heat/Cold tolerance	Processing: dry or wet
Method of milling	

CACAO



Existing variables of classification (FCC variables)	
Country of origin	Slaty Beans
Variety	Insect Damaged beans
Adulteration	Germinated Beans
Bean Cluster	Flat Beans
Bean Size	Mouldy bean
Broken beans	Fermentation
Degree of contamination	Level of Foreign Matter of the bean
Cut Test	

*Colombia, Ecuador, México, Brazil have advanced in certain classifications for GI and DO. But these are too superficial. These projects are the cradle for the AOC further classification.*

Caring to sustain the land of the coffee-cacao crops at the upstream level implies to sit down and formulate a comprehensive characterization of all the relevant variables as the French did for their wine.

These variables include all the terroir characteristics for coffee and cacao species, not just the typical agro-operational yields. These variables are the core of the upstream fields, and should be designed by the farmers and the government for each region. The classification of AOC for coffee and cacao at the upstream will oblige the midstream to pay more for the beans, directly to the farmers guild, not the intermediaries.

- Currently, at the upstream level there are punctual advances of incomplete databases which have helped to define certain Geographical Indicators (GI) and Denomination of Origin( DO). However, these variables are not enough to raise the value of the beans (coffee-cacao) and negotiate with the midstream directly (not brokers or intermediary agents).
- The European midstream have taken the toil to set standards to beans received at the port of destiny, but the terroir variables are not of their interest, because they will be enforced to pay more for the classified beans. Don´t expect the midstream players to support the AOC efforts, unless they see the economic benefits to build higher quality and different value propositions for their clients. A lot to negotiate in the future.
- The midstream buyers of cacao and coffee green beans care for the quality of the bean for their activities processing, not the terroir variables of AOC classification.
- The standards of the FCC (Federation of Cocoa Commerce) with quality rules from the ISO 2451 answer the needs of the midstream players. In coffee, the World Coffee research has categories for the varieties of Robusta and Arabica.
- In summary, the AOC system at the upstream level is missing!

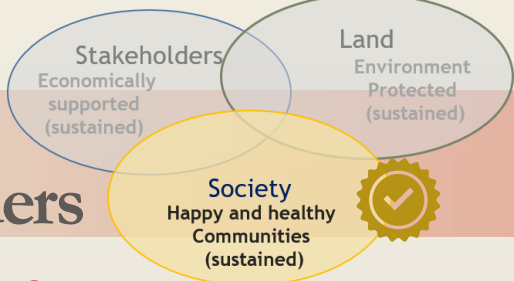
Eleonora Escalante Strategy

State of the Art Corporate Strategy  
All rights reserved. Copyright 2016-2026

All the references cited and used for our inferences are shown in slide 12-13

# Cacao and Coffee 101.

## Success Strategies for Small Farm Holders



### **Sustainability: Beyond caring for the Land Part 2**

#### **Caring for the society**

**Sustaining the society of coffee-cacao producer nations:**  
 The upstream societies involved in the cacao and coffee production are organizing their communities with "table-stakes and functional values". The labor and daily tasks of the small planters are structured for getting revenues at the bottom basics of the pyramid of value. Their production is a commodity with international pricing, which cover the basic expenses, leaving no room for raising from the current precarious conditions. If the value proposition of the beans doesn't change, these societies are without any value added to charge aggregated differentials of pricing.



**At the upstream level**

*Caring for the society that is involved in the upstream level (cacao and coffee) implies to raise the quality of life of the wage earners, their families, and villages. When the small-farmers have direct contact with the midstream players, the midstream Europeans and Americans can acknowledge the small-farmers needs and wants.*

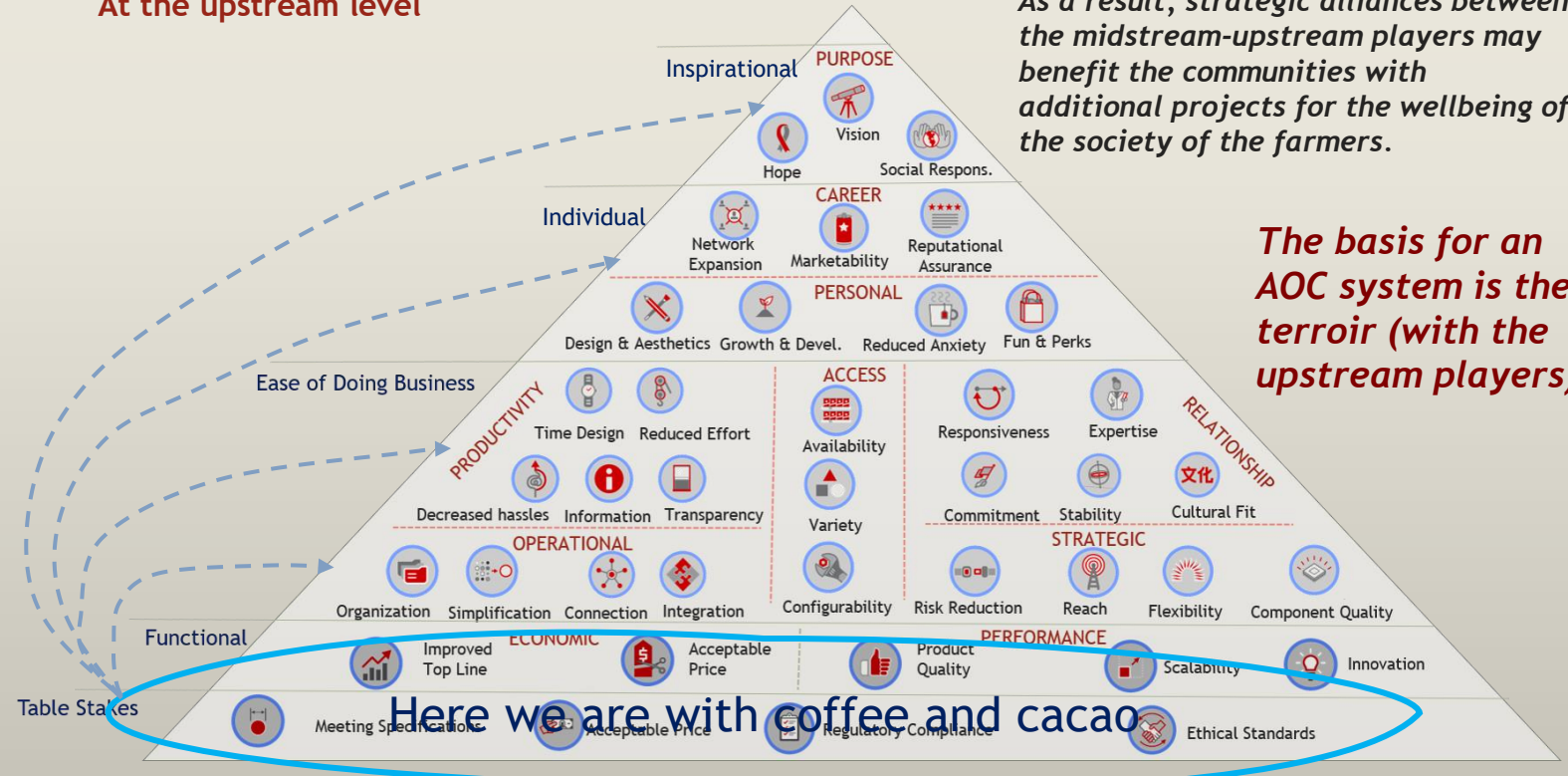
*As a result, strategic alliances between the midstream-upstream players may benefit the communities with additional projects for the wellbeing of the society of the farmers.*

**The basis for an AOC system is the terroir (with the upstream players).**

The shift from low-cost strategy to a differentiation strategy at the upstream level allows different pricing of the beans.

We suggest the differentiation of cacao and coffee beans at the upstream with the uniqueness of the terroir for an AOC system accepted by the midstream and downstream players.

Coffee and Cocoa beans must be elevated using the terroir variables. But the effort should be as a global upstream block, to negotiate directly the acceptance of the project with the midstream players, who also need to negotiate with the downstream players. Otherwise, it won't work.

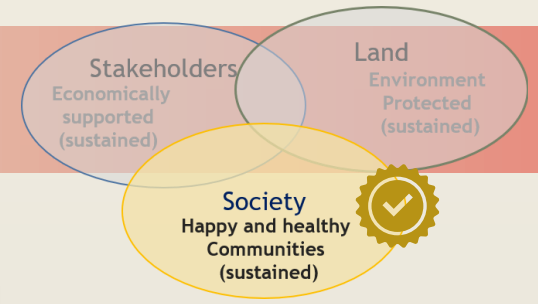


All the references cited and used for our inferences are shown in slide 12-13

12/6/2026

# Cacao and Coffee 101.

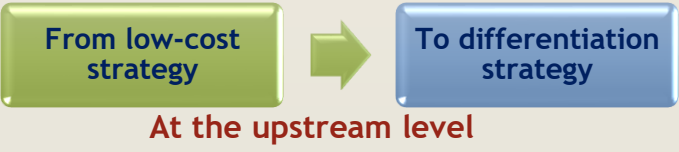
## Success Strategies for Small Farm Holders



### Sustainability: Beyond caring for the Land Part 2

#### Caring for the society

**Sustaining the society of coffee-cacao producer nations:**  
The upstream societies depend on raising the dignity, self-esteem, and DNA of their terroirs.



Raising the commercial value propositions will only happen when the coffee and cacao small planters (in conjunction with the medium and big size farms) could shift from the low-cost strategy to the differentiation strategy. Only by technically learning about the richness of their own AOC characteristics, planters will be able to rise from poverty. And with them, their societies.

To acknowledge this situation is just the starting point.

**The basis for an AOC system is the terroir (with the upstream players).**

Have a Good flowering season! ☀️



Flowering of Coffee trees. Costa Rica.  
<https://modernstandardcoffee.co.uk/blogs/journal/coffee-flowering>



Flowering of Cacao trees. Costa Rica.  
<https://www.smithsonianmag.com/science-nature/you-wouldnt-have-chocolate-without-invisible-flies-and-extreme-yeast-180954172/>

All the references cited and used for our inferences are shown in slides 12-13

# Cacao and Coffee 101.

## Success Strategies for Small Farm Holders



### 🚩 Sustainability: Beyond caring for the Land

#### Bibliography 1/2

1. World Coffee Research catalog of varieties. <https://worldcoffeeresearch.org/resources/coffee-varieties-catalog>
2. Climate Change and Chocolate <https://www.climate.gov/news-features/climate-and/climate-chocolate>
3. Climate and Coffee. <https://www.climate.gov/news-features/climate-and/climate-coffee>
4. The true cost of cheap coffee <https://foodtank.com/news/2014/10/the-true-cost-of-cheap-coffee>
5. M'BO, Kacou. "Climate Variability and Outlook of Cocoa Production in Côte D'Ivoire under Future Climate." Climate Variability and Outlook of Cocoa Production in Côte D'Ivoire under Future Climate, 2023. [https://www.academia.edu/107704157/Climate\\_Variability\\_and\\_Outlook\\_of\\_Cocoa\\_Production\\_in\\_C%C3%B4te\\_Divoire\\_under\\_Future\\_Climate](https://www.academia.edu/107704157/Climate_Variability_and_Outlook_of_Cocoa_Production_in_C%C3%B4te_Divoire_under_Future_Climate)
6. Corbitt, R. Standard Handbook of Environmental Engineering. 2<sup>nd</sup> edition. McGraw Hill 1999. <https://www.amazon.com/Standard-Handbook-Environmental-Engineering-Corbitt/dp/0070131600>
7. Lee YG, Cho EJ, Maskey S, Nguyen DT, Bae HJ. Value-Added Products from Coffee Waste: A Review. *Molecules*. 2023 Apr 18;28(8):3562 <https://pmc.ncbi.nlm.nih.gov/articles/PMC10146170/>
8. Anoraga SB, Shamsudin R, Hamzah MH, Sharif S, Saputro AD. Cocoa by-products: A comprehensive review on potential uses, waste management, and emerging green technologies for cocoa pod husk utilization. *Heliyon*. 2024 Jul 31;10(16):e35537 <https://pmc.ncbi.nlm.nih.gov/articles/PMC11365323/>
9. FAO, Optimizing Soil Moisture for plant production <https://openknowledge.fao.org/server/api/core/bitstreams/00d8e499-f526-45e5-ac83-42d43d13037e/content>
10. Beer et Al. Shade management in coffee and cacao plantations. July 1998 *Agroforestry Systems* 38(1):139-164 [https://www.researchgate.net/publication/226134043\\_Shade\\_management\\_in\\_coffee\\_and\\_cacao\\_plantations](https://www.researchgate.net/publication/226134043_Shade_management_in_coffee_and_cacao_plantations)
11. Cassauwers, T. Brewing Resilience: researchers safeguard coffee and chocolate from climate threats. <https://projects.research-and-innovation.ec.europa.eu/en/horizon-magazine/brewing-resilience-researchers-safeguard-coffee-and-chocolate-climate-threats>
12. INAO. Terroir France <https://www.inao.gouv.fr/expo-90ans/10-terroir-paysage-identite-produit>
13. History of the Wine Industry INAO. How the création des appellations d'origine contrôlées (AOC) occurred <https://www.inao.gouv.fr/histoire-1935-1970>
14. How to read a French wine label <https://dispatcheseurope.com/alice-verberne-in-france-read-a-french-wine-label-like-a-connoisseur-pt-1/>
15. Montagnon, C. Editor. Coffee: terroirs and qualities Chapter: Origin coffees: are appellations of origin on the horizon? Quae Editors, 2006 (pp.49-66) [https://www.researchgate.net/publication/236679124\\_Origin\\_coffees\\_Are\\_Appellations\\_of\\_Origin\\_on\\_the\\_horizon](https://www.researchgate.net/publication/236679124_Origin_coffees_Are_Appellations_of_Origin_on_the_horizon)



Photo Source. Video about the Cote d'Ivoire plantations of cocoa. <https://youtu.be/-00y3Gm7Vw0>

# Cacao and Coffee 101.

## Success Strategies for Small Farm Holders



### 📖 Sustainability: Beyond caring for the Land Part 2

#### Bibliography 2/2

16. Buriticá, Fabio, José Iván Vanegas, and Juan Carlos Suárez. 2025. "Influence of Soil Physical and Hydraulic Properties on Cacao Productivity Under Agroforestry Systems in the Amazonian Piedmont" *Agriculture* 15, no. 18: 1973, <https://www.mdpi.com/2077-0472/15/18/1973>
17. CAOBISCO/ECA Cocoa Beans: Chocolate and Cocoa Industry Quality Requirements. December 2023. (End, M.J. and Dand, R., Editors), CAOBISCO/ECA, Brussels. European Cocoa Association. <https://www.eurococoa.com/>
18. Kroeger, Alan et al. *Climate-Smart Cocoa in Côte d'Ivoire and Ghana, Aligning Stakeholders to Support Smallholders in Deforestation-Free Cocoa*. World Bank, Washington, DC <https://openknowledge.worldbank.org/server/api/core/bitstreams/dd576d7b-f6f2-5f6f-8e68-846ef6d68be6/content>
19. *Farmer Pocketbook*. Increasing The Climate Change Adaptation And Mitigation Potential Of Small Holder Cocoa Farmers In Bundibugyo. <https://www.trias.ngo/content/uploads/sites/3/2024/10/Farmer-Pocket-Book.pdf>
20. Bhattacharjee, R. *Taxonomy Classification of Cocoa*. Book. Achieving sustainable cultivation of cocoa Volume 1 Chapter: 1 Burleigh Dodds Science Publishers. [https://www.researchgate.net/profile/Ranjana-Bhattacharjee/publication/320419243\\_TaxonomyClassification\\_of\\_Cocoa/](https://www.researchgate.net/profile/Ranjana-Bhattacharjee/publication/320419243_TaxonomyClassification_of_Cocoa/)
21. Sanchez-Capa, Maritza et Al. "New Characteristics in the Fermentation Process of Cocoa (*Theobroma cacao* L.) "Super Árbol" in La Joya de los Sachas, Ecuador" *Sustainability* 14, no. 13: 7564. year 2022. <https://www.mdpi.com/2071-1050/14/13/7564>
22. González-Orozco, C.E., Porcel, M., Yockteng, R., Caro-Quintero, A., Rodríguez-Medina, C., Santander, M., Zuluaga, M., Soto, M., Rodríguez Cortina, J., Vaillant, F.E. and Escobar Parra, S. (2024), Integrating new variables into a framework to support cacao denomination of origin: a case study in Southwest Colombia. *J Sci Food Agric*, 104: 1367-1381 <https://scijournals.onlinelibrary.wiley.com/doi/full/10.1002/jsfa.13016>



Photo Source. Video about the Cote d'Ivoire plantations of cocoa. <https://youtu.be/-00y3Gm7Vw0>



Photo from Microsoft Stock Images

*Thank you*

Coffee and Cacao 101.  
Success strategies for Small Farm Holders

<https://eleonoraescalantestrategy.com/>

