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Photo by Neil Palmer/CIAT

White Paper

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Sustainable cocoa in the Dominican Republic



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Directing much needed investment into the sustainable cocoa value chain

The global cocoa supply chain is fraught with multiple economic, social and environmental challenges – creating a potentially critical situation for the sector. Challenges in production include the availability of productive land, deforestation concerns, pesticide/chemical use, the availability of trained workers, local climate and soil conditions, access to modern and appropriate agronomy techniques, production costs, processing, transportation and export costs and many more.

The social concerns are much more fundamental than production inefficiencies and lead to a paradoxical situation where the world is running out of cocoa farmers despite huge and growing demand for cocoa worldwide. Younger generations of farmers no longer see any prospects from working in cocoa and older generations are reaching their life expectancy. The explanation simply is that smallholder cocoa farmers currently do not receive a living income and the supply chain has been squeezed beyond sustainability. The reasons, though, are complex.

Understanding these issues is the first step to uncovering significant opportunities for both innovation and strategic capital investment to address the needs of the cocoa industry to meet ambitious sustainability goals by 2020. Developing small producer markets such as the Dominican Republic – already the leading producer for the small but rapidly growing organic cocoa market – can showcase how ecologically sustainable and socially responsible production methods can work efficiently and profitably at scale and to the benefit of all participants in the production value chain.

More than 70 percent of the global supply of cocoa currently comes from production in West Africa, where in recent years have witnessed an average

annual decline in production. This is the result of aging cocoa crops and lower productivity, which is the result of past underinvestment and poor agricultural practices. These problems are further exacerbated by ongoing child labor/slavery practices. This may affect up to 12,000 of the 200,000 children working in the cocoa plantations of Côte d'Ivoire, for example. It is estimated that more than 1.8 million children in West Africa are involved in growing cocoa.

Trying to remedy such problems proves to be very challenging given that the vast majority of cocoa production is coming from smallholder farmers (there are more than five million cocoa farmers worldwide, with 90 to 95 percent of production coming from smallholder farmers on three acres of land or less). Any attempt to improve the situation requires extensive intervention of the large players in a very concentrated industry at multiple levels of society. For this reason, most of the world's largest cocoa companies have joined forces in an attempt to address such issues through programs such as CocoaAction through the World Cocoa Foundation, which aims to achieve sustainability in cocoa while supporting communities that rely on cocoa for all or part of their livelihood.

Commitments by some of the world's largest chocolate companies for 100 percent sustainably sourced cocoa by 2020 or shortly thereafter will ensure the demand for sustainable cocoa continues to grow for decades to come. This demand for sustainable cocoa will be the leading driver of change and evolution in the cocoa industry.

The market for cocoa

The current chocolate market, which depends on the cocoa bean, is estimated to be worth USD 110 billion to 120 billion per year. This demand is supplied primarily by developing countries in Africa, Asia, Oceania, Latin America and the Caribbean. Over the last 50 years, the demand for cocoa has grown on average by 2.5 percent annually, with total world production for the 2015-16 cocoa year forecasted to reach 4.15 million tons. If we assume this growth will continue at a similar rate of two percent annually, the world will require an additional one million metric tons of supply to meet demand by 2020. Such an increase in volume is equivalent to the annual production of Cote d'Ivoire, currently the world's leading producer of cocoa.

Within the cocoa sector there is a rising demand not only for sustainable cocoa but organic cocoa as well. Organic cocoa represents less than five percent of global production, but continues to grow despite the fact that conversion of existing cocoa fields to organic production is typically a three-year process. This statistic mirrors United States consumer sales of organic products, which exceeded USD 39 billion in 2015 but still only represents five percent of total US food sales. While the cocoa industry continues to invest heavily in sustainable certification of existing fields and is making significant progress, there continues to be significant opportunity to move beyond "sustainable" certification to also include organic and biodynamic production.

While the cocoa market is comprised of two main categories of cocoa: "Ordinary or Bulk" cocoa, which represents 90 percent of the cocoa market, and "Fine or Flavor" cocoa, which is the remaining 10 percent (see Figure 1), we choose to focus on the highest value cocoa, i.e. fine or flavor. Latin America and the Caribbean produce 80 percent of the world's fine or flavor cocoa, which commands premium market prices (in some cases three to four times higher) than bulk cocoa.

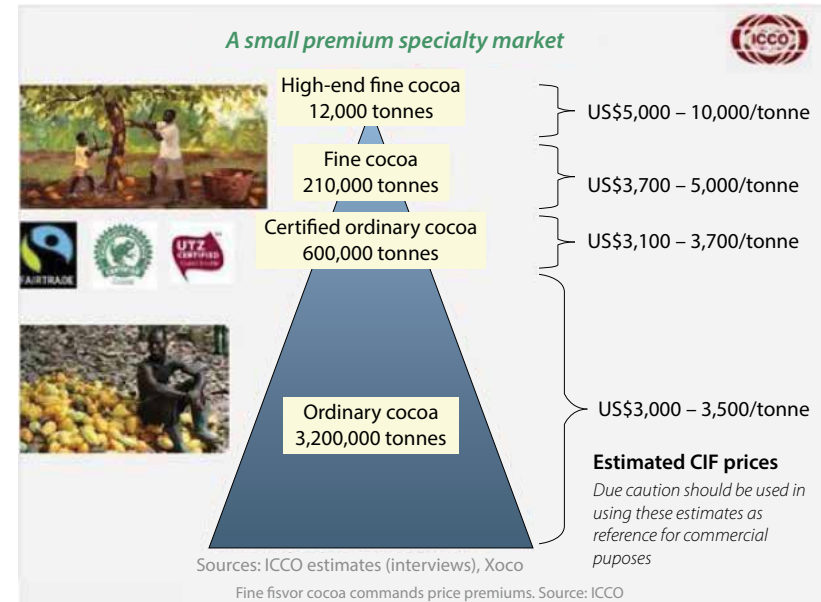


Figure 1. The cocoa market

Our focus is on the production of organic fine and flavor cocoa in the Dominican Republic in the most sustainable fashion possible, delivering economic performance while enhancing the livelihoods of those operating in the sector. To accomplish this, we must address numerous challenges within the local cocoa industry.

Despite the Dominican Republic being one of the fastest growing countries in the region, the country has not witnessed sufficient welfare improvements. Poverty is at around 30 percent and lack of sufficient job creation and actual real wage decline in recent years are major issues. Cocoa is grown by around 40,000 small-scale cocoa growers. One of the main agricultural exports, cocoa is worth around USD 60 million a year to the economy. Most farmers sell the harvested cocoa to a number of private cocoa companies that export cocoa. Among these,

approximately 10,000 producers are registered with Conacado, the world's largest cocoa cooperative, of which half of the production is sold to fair trade markets.

Efforts by Conacado and other organizations in recent years have already demonstrated to farmers that the production of quality, fermented cocoa increases farmer household income. Until only a few years ago, all the island's cocoa production was shipped mainly to the US as low quality unfermented cocoa beans.

Addressing the challenges

The Dominican Republic is the world's largest producer of organic cocoa and the only country in the world producing biodynamic cocoa. The country now produces some of the finest quality cocoa in the world and offers good agro-ecological conditions for cocoa production. The combination of very good growing conditions, minimal crop pests and diseases compared to other locations, existing cocoa infrastructure, long history and favorable tax climate for investors within a free-trade zone provide a very good foundation for sustainable investment.

The Dominican Republic has also started its "Journey to Sustainable Growth" as part of its Climate Change Development Strategic Plan. This plan commits the country to reducing its total greenhouse gases by at least 25 percent by 2030.

A comprehensive assessment of the Dominican Republic has indicated that a "multi-partner, multi-site project" with smallholders/farmers cannot be a starting point for a commercial cocoa project in the country due to the complexity in management, legal structure and risk profile. As a result, the most appropriate course of action would be the establishment of a managed cocoa project on purchased land with a centralized, modern post-harvest facility, accompanied by a robust legal, technical and financial foundation. This core project will provide the opportunity to outgrow with neighbouring smallholders and to introduce capacity-building, superior genetic planting material and new production methods. At the same time, the project can benefit economically from the purchase of wet cocoa from these farmers to improve capacity usage and increase profitability of the post-harvest facility (see Figure 2 for data on the ecological and socioeconomic value of cocoa). Our established strong relationships and future contracts with local cooperatives will facilitate the outgrower concept.

The objective of the initiative is to achieve integrated landscape-scale outcomes by developing a pattern of medium to large-scale cocoa projects financed by private and public sector investors with similar objectives. NatureBank coordinates the activities, creates efficiencies along the production value chain and ensures that smallholder producers benefit from the availability of superior quality production methods.

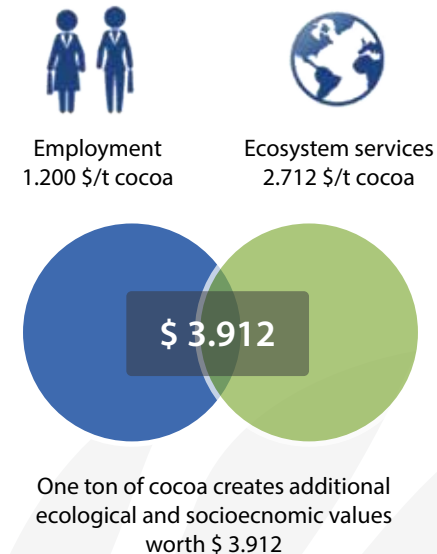


Figure 2. The value of cocoa

Source: ForestFinest Consulting

To address the known and foreseeable challenges, we have undertaken a comprehensive analysis of the country and cocoa sector, and have drawn the following conclusions:

Jurisdiction

The **main advantages of the Dominican Republic**, compared to many other countries, are that it:

- is the largest organic cocoa producing country with experienced service providers
- does not have the two most severe cocoa diseases in Latin America
- has large land plots available for development with good soil quality for premium cocoa production
- has significant potential to expand the project to smallholders and cooperatives (outgrowers)
- has a large number of experienced workers without forced labor or child labor
- has excellent infrastructure (roads, airports, harbors) and short travel distances
- has political and economic stability and modern legislation supporting FDIs.

Technology/production utilization, labor/management deployment

The use of new or well-established technology, procedures and products (none of which require increased skill levels of the workforce), in conjunction with well-established management and agronomy expertise:

- experienced land use management team – the NatureBank team has a decade of land use development and management with specific expertise in sustainable fine and flavor cocoa
- experienced onsite cocoa team – harnessing the experience of leading world cocoa experts in conjunction with local expertise to maximize performance of land assets
- establishing long-term management/production plan – “From Bean to Bar”
- field management – mechanization and optimization to increase productivity, streamlining labor requirements, improving efficiencies
- postharvest processing – adjusted for flavor optimization, thereby maximizing prices
- drones – precision mapping, monitoring of multiple data points to improve monitoring and overall production levels
- modeling using big data, diagnostic tools – to augment project design and implementation and monitoring
- grafting – for highly productive clones that thrive in the local environment
- cover crops – for drought alleviation, erosion and leaching reduction, soil augmentation and water capacity
- biochar – to be assessed at project runtime
- solar – potential to alleviate dependence on fossil fuel sources at site
- carbon offsets – as experienced carbon project developers, we have layered carbon offsets on multiple agro-forestry projects, and would look to utilize carbon as a potential value-add if appropriate.

Milestones for implementation

The investment

NatureBank's Sustainable Cocoa Investment Initiative foresees the facilitation and development of up to 3,000 hectares of sustainably managed cocoa agroforestry systems via a pattern of medium to large-scale investment projects with focus on the production of certified premium fine or flavor cocoa. The investment in cocoa production in the Dominican Republic foresees NatureBank and its partners implementing a large-scale lighthouse cocoa project on purchased land – including the establishment of all required processing facilities in order to keep most of the value chain inside the project.

As a single investor, a minimum project size of 200 ha is required (target size: 500 ha) to establish an efficient and profitable cocoa investment project in the country. The calculation model indicates an investment need of EUR 2.5 million to cover the minimum size. Two hundred ha is a realistic and manageable size to implement in the first year of the cocoa project with potential for expansion in the following years.

This initial project requires the installation of a small training center as well as post-harvesting facilities like drying and fermentation facilities. The project objective is to produce high quality, fine and flavor cocoa under international recognized certification schemes (such as UTZ). The implementation of an organic certification and a carbon scheme will be evaluated after the project has begun.

1. Corporate setup in the Dominican Republic (in process)
 2. Land search (greenfield/brownfield) in selected provinces (completed for lighthouse project)
 3. Technical field due diligence conducted by ForestFinest Consulting (partially completed)
 4. Complete due diligence on investment decision and size (near completion)
 5. Selection of local service providers and experienced local management (partially completed)
 6. Operational commencement of new cocoa company
 7. Operational maximization of supporting infrastructure
 8. Establishment of outgrower program
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Strategic partners



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