



Madagascar ER-Program Area

Guide to agribusiness development in the Madagascar ER-Program Area, including crop feasibility, project design, and implementation

EXECUTIVE SUMMARY

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This document provides the framework for agribusiness development in Madagascar aligned with the Reducing Emissions from Deforestation and Degradation (REDD+) approach. The framework will support the private sector to develop agribusiness opportunities that both create value for the population and at the same time protect the forest resources.

The main cause of deforestation in Madagascar is subsistence agriculture. The challenge is therefore to orient the rural population towards sustainable agriculture practices, including sustainable cash crops with attractive market opportunities. Agriculture accounts for almost 30 per cent of Madagascar's GDP, for 40 per cent of export earnings and employs more than 70 per cent of the labour force. Large-scale farms dominate the production of sisal, sugarcane, tobacco, bananas, and cotton; however, overall, Malagasy agriculture is dependent mainly on small-scale subsistence farmers, where the average farm size is 0.87ha (Source: FAO).

This document focuses on the REDD+ ER-Program Area, located in the escarpment of the east, lined roughly from south to north until the Antongil Bay. This ER-Program Area includes a large proportion of Madagascar's remaining primary rainforests and includes many endemic and threatened animal and plant species.

An analysis of the technical, commercial and socio-economic factors in the region revealed cloves, vanilla, cocoa, pepper, litchi, coffee, cinnamon and honey as the most promising value chains. Importantly, given the range of challenges related to Madagascar's economy, political, land rights and export stability, some level of seed financing will be required in order to attract international investors to fund these value chains:

- **Cloves**, and more specifically, **clove oil**, can be produced within a sustainable agroforestry value chain, assuming the processing fuel requirements are sustainably sourced. The value chain has significant labor requirements (186 man-days/ha/year), plays an important role in local livelihoods, and offers a good source of income during lean seasons. Development of this value chain will draw on the experience of existing organizations such as Givaudan, Touton, and Quimdis, and should focus on driving sustainable distillation. In order to produce 2 litres of clove oil, Malagasy farmers typically use 600 kg of wood, therefore a successful processing agribusiness could develop sustainable bamboo charcoal/pongamia bio-diesel, efficient cookstoves, or even community processing centres. This approach would offer promising financial returns while significantly reducing deforestation and forest degradation.
- **Vanilla** is a major crop in Madagascar; the country produces over 60% of global natural vanilla; it provides income to a large number of small-scale farmers across the SAVA region, and is currently experiencing peak prices. Women are particularly involved in pollination and post-harvest processing (vanilla preparation). In general, private investors will seek to invest in projects that are aligned with the Sustainable Vanilla Initiative (SVI), which supports sustainable production, strives to improve livelihoods of vanilla-farming households, and works to improve the vanilla quality. (e.g. reducing early-harvesting of green vanilla and addressing improper vacuum packing). Partnerships with organizations such as Firminich and Symrise could provide assurance to private investors, where the most attractive business model is a cooperative approach; this helps farmers plant crops such as cocoa, cloves, and cinnamon alongside their vanilla vines to hedge against the price risk. At present, the Malagasy vanilla sector is a very risky sector exhibiting high volatility, linkages with 'bois de rose' trafficking, and poor governance (e.g., piracy, speculation, money laundering, etc.).
- Madagascar is a renowned exporter of high-quality **cocoa** with all exports classified as 'fine and flavour cocoa' by the ICCO. However, production in Madagascar remains low compared

to other producing countries. Cocoa production is concentrated in the Sambirano region (outside the ER-Program Area) and many projects aiming to expand cocoa production in other regions have not succeeded. Nevertheless, there are opportunities to scale-up cocoa production in the ER-Program Area based on full or partial shade cropping, supporting the maintenance of forest cover and biodiversity. A potential agribusiness in the ER-Program Area could be cocoa intercropped at a high density (1.5m X 3m – 1,777 trees/ha) with bananas for the initial three years of growth and combined with other fast-growing trees (e.g., *Gliricidia*, *Erythrina*, *Albizzia spp.*). Private investors will seek partnerships with existing players such as Valrhona (a company producing pure origin cocoa from Madagascar and developing social projects with smallholder farmers), Lazan'ny Sambirano (a cooperative that has formed a partnership with Ethiquable), Barry Callebaut and Prova (major companies whose activities include leading a project to develop cocoa in the SAVA region), and Akesson (a company producing high-quality and organic cocoa based on a 'plantation' model in Madagascar).

- The **pepper** market is fast-growing and exceeds US\$3bn globally. Agribusiness opportunities in the ER-Program Area vary according to the type of pepper, and have very different commercial and forestry impacts: Wild pepper (local pepper) does not depend on significant water or other inputs, but it is difficult to collect and collectors often cut the whole tree, resulting in damage to forested areas; Farmed pepper can be grown as a mixed crop, where vines can be placed on living supports such as *Gliricidia*, coconut, coffee, jackfruit, etc. Private investors could support projects that produce pepper along with other valuable crops (hedging the price risk), or will seek to sponsor sustainable wild pepper harvesting (e.g., through partnerships with local NGOs such as Fanamby), targeting niche markets.
- **Litchi** is an important crop in Madagascar, where national production is close to 100,000t per year. Both litchi production and processing are an important source of income for many people; in the Tamatave region alone, 20,000 – 30,000 households are involved in the litchi business; 80% of this production is from 'natural trees', 15% is from trees cultivated by farmers, and 5% is from commercial plantations. Only 20,000t of litchi is exported from Madagascar each year, mainly to European markets; as such there is an opportunity to grow volumes exported. Poor litchi quality in Madagascar is a key concern, resulting from poor management, climate change (reduced rainfall and increased temperatures) and barriers to export markets (especially EU). Production per plant is typically 100kg/year but with appropriate management and irrigation, it can be as high as 300kg/year. Therefore, there are opportunities for new producers to produce superior quality litchis at higher yields using irrigation (i.e., replicating the model of Le Vergers de Madagascar); there are also opportunities to partner with established operators and processors within the ER-Program Area (e.g., Sopral, Scrimad, and CHTT) to convert the litchis into juice, marmalade, and fruit paste.
- Before the 1990s, **coffee** was the primary agricultural product exported by Madagascar in value terms. Currently, Madagascar occupies a low rank in terms of volumes exported: the current quantity of coffee exported by Madagascar is approx. 7,000t. Coffee can exist in shade or semi-shade, and intercropped within agroforestry systems. Farmers will likely prefer the Robusta plants, as they are hardier and easier to grow and harvest. The primary challenge to coffee farmers in the ER-Program Area is governmental, where there is significant price volatility (since the dismantling of the Stabex), value chain disorganization, and a lack of technical support. The key focus for project sponsors is improving farming and processing techniques to increase quality, yield and therefore competitiveness of coffee from Madagascar. A further opportunity that may stimulate interest from private investors is the hybridization of Robusta with native coffees that hold a very low caffeine content.

- Cinnamon** is a promising Malagasy crop, where exports amount to 3,000t to 4,000t per year. The country’s cinnamon is renowned for its unique taste and smell as well as giving flavor to international cuisines and pastries, especially in chocolate. While there is a risk of over-exploitation, there is potential for tree regeneration and agroforestry through intercropping in the ER-Program Area. The challenge is to encourage sustainable harvesting, where the branches are carefully harvested, rather than the whole tree being cut. Private investors may seek to co-invest in programs that help farmers create new cinnamon plantations on degraded land, by clearing competing underbrush. Furthermore, intercropping or specialist cinnamon leaf oil production and processing could solve the issue of delayed harvesting.
- Honey** offers significant commercial and REDD+ impacts. While existing honey production is estimated at 3,000t each year in Madagascar and generates USD6m in revenue, it has potential for major expansion. However, the critical risk is the prevalence of the varroa mite, which has devastated the country’s colonies. Project developers will seek to partner with experienced organizations (e.g., Sigma, T’TELO), providing training that covers swarm collection through to honey extraction and the construction of improved hives.

Strategy Blueprint: The proposed strategy blueprint to develop these value chains in the ER-Program Area involves consideration of six key stage-gates and describes key requirements that should be met, or at least considered, when developing agribusinesses. Given the scale of the technical, political and socio-economic challenges, the focus in the short-term should be on driving marginal gains at each stage of the value chain; this can result in improved yields, higher returns, combined with REDD+ benefits in the ER-Program Area.

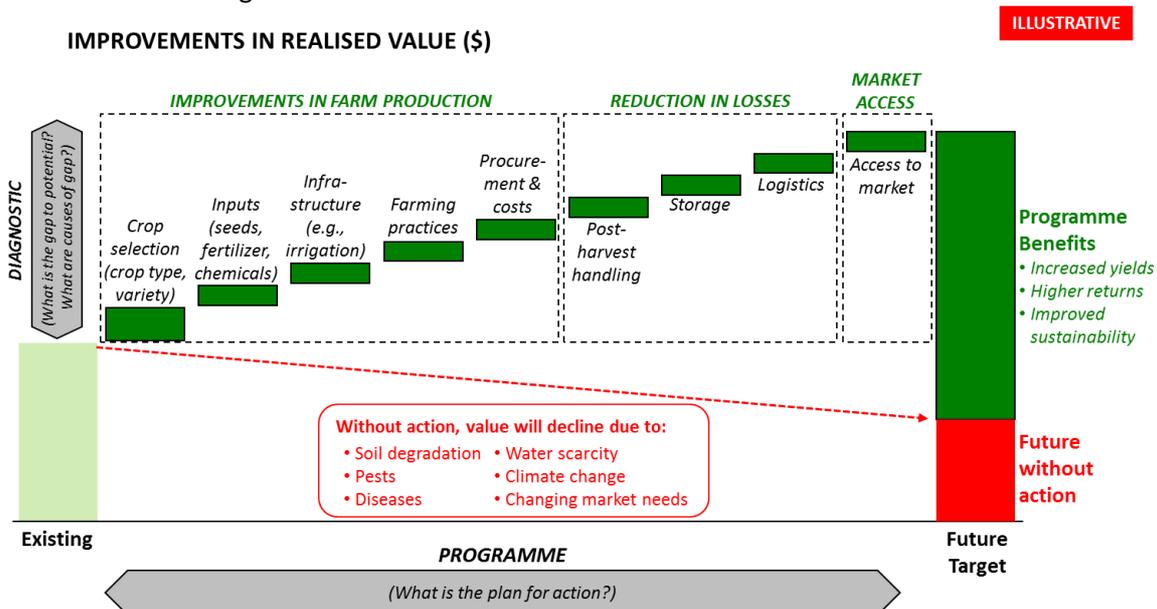


Figure 1: Marginal improvements can have material benefits in Madagascar

Investors will look for low-risk investment options with credible and established companies, where there has been extensive engagement with specific offtaker(s). It is clear, therefore, that the initial attraction to private investors will be addressing key weaknesses and inefficiencies in the existing value chains. This strategy blueprint therefore proposes agribusinesses that focus on renewal, expansion, upgrading, cooperatives, small-scale farmer training, etc. rather than new value chains, greenfield projects, or even large-scale new plantations.

Finally, large multinationals (e.g., the World Bank), as well as the Malagasy government, will have to assist in breaking down the significant existing institutional barriers (such as land ownership, taxes, weak legal and regulation framework, export licenses, etc.).