

SDM: Case Report Prova & Barry Callebaut

Service Delivery Model assessment: Short version
June 2017

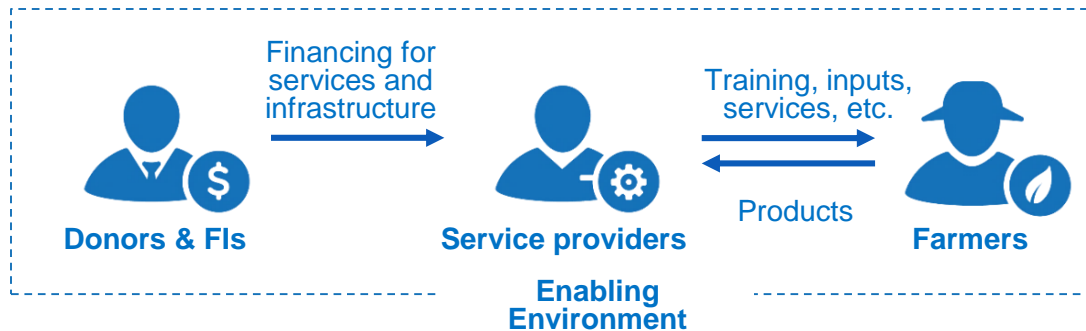
Location: Madagascar
Commodity: Vanilla & cocoa
Services: Training, cocoa diversification, social services, certification & verification, vanilla theft prevention



What are SDMs and why are we interested in analyzing them?

Service Delivery Models (SDMs) are supply chain structures which provide services such as training, access to inputs and finance to farmers. The aim is to improve farmers' performance, and ultimately their profitability and livelihoods.

A SDM consists of service providers, often supported by donors and financial institutions (FIs), and farmers receiving the services. All are set within a specific enabling environment.



By analyzing SDMs, we aim to support **efficient, cost-effective and economically sustainable SDMs at scale** through:

Key drivers for success of SDMs benchmarking



Innovation opportunities to support



Cross-sector learning, learning community



Convening at sector and national level



Analyzing SDMs brings a range of benefits



Farmers and farmer organizations

- **Enhanced services**, which lead to improved farmer income and resilience, through higher productivity and product quality
- **Improved SDM outcomes**, which lead to an improved social and environmental environment



SDM operator

- Better understanding of your **business case**
- Insights to **improve service delivery**
- Insights to develop a **cost-effective SDM**
- Identification of opportunities for **innovation** and **access to finance**
- **Comparison** with other public and private SDM operators operating across sectors/geographies
- Ability to communicate **stories of impact and success** at farmer level



Investors/FIs

- **Common language** to make better informed investment decisions
- Insights to achieve optimal **impact, efficiency and sustainability** with investments and partnerships in SDMs

The Prova / Barry Callebaut SDM and objectives

General SDM information:

Location:	Madagascar
Timing and analysis scope:	2016-2021
Scale (start of analysis):	1,500 farmers
Scale (end of analysis):	1,500 farmers
Funding:	Prova and Barry Callebaut
SDM Archetype*:	Local Trader / processor



Prova is a worldwide leader in conceiving and manufacturing vanilla, cocoa, coffee and sweet brown extracts, present in more than 60 countries across five continents



The Barry Callebaut Group is a leading manufacturer of chocolate and cocoa products, active in more than 30 countries. Barry Callebaut is committed to sustainable cocoa production.

SDM objectives:

- 1 Increase vanilla production
- 2 Increase on-farm value creation through vanilla curing
- 3 Improve farmer incomes and resilience (including diversification with cocoa by vanilla farmers)
- 4 Improve traceability and transparency of the program
- 5 Remove child labor from this cocoa and vanilla supply chain

SDM rationale:



* For more info on SDM archetypes, see the [IDH Smallholder Engagement Report](#)

Services delivered and farmer segmentation

Farmer training

- Farmers are trained in Farmer Field Schools (FFS) on good agricultural practices (GAP) for vanilla and cocoa cultivation, and the curing of vanilla
- Financial management training is provided to help farmers better manage their cash flow, considering e.g. a volatile market and diversification with cocoa. Financial knowledge is also important as many farmers distrust official (micro-) financial infrastructure and instead rely on loans from middlemen

Cocoa diversification

- With the support of VDB (a local NGO), nurseries are set up to produce cocoa seedlings
- These are used to plant portions of vanilla farmers' plots
- Farmers set up and manage own nurseries; equipment is fully funded and provided by Barry Callebaut and Prova (not leased or pre-financed)

Certification & verification

- All vanilla and cocoa is internally inspected and verified and will be according to Prova and BC internal standards
- Some of the vanilla production is certified organic, some could be Fairtrade and UTZ certified, depending on demand
- The target is to verify cocoa according to the Barry Callebaut cocoa sustainability standard "Cocoa Horizons"

Vanilla theft prevention

- Due to high vanilla prices, theft of harvested vanilla is common in Madagascar; as a result, farmers sell their vanilla too early which leads to poorer quality
- To prevent this, locals patrol the farming community at night, for which they receive some reimbursement

Social services

- Various services are provided to local communities, including education and nutritional services, healthcare and access to water
- Social programs raise awareness on child labor

Farmers are segmented in this SDM:

Segment 1

Vanilla farmers are considered segment 1 when they receive GAP training and actually apply it. These farmers recognize and can explain to other members the benefits of applying GAP. Besides training, these farmers receive all other services except cocoa diversification.

Minimum criteria for this segment are that farmers must be motivated to learn about GAP and are ready to apply it.

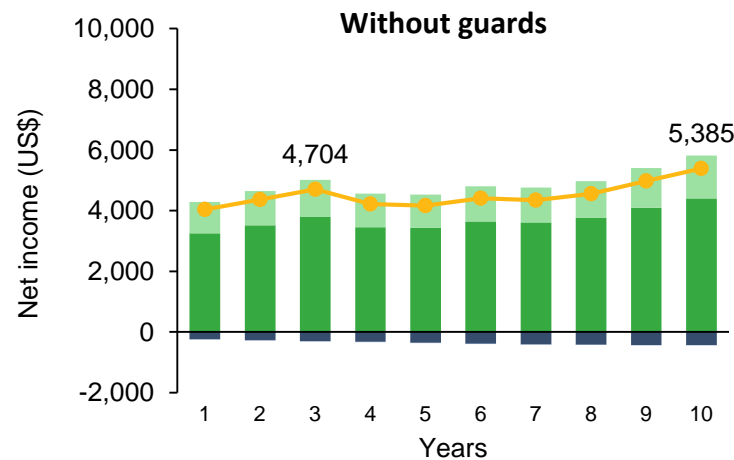
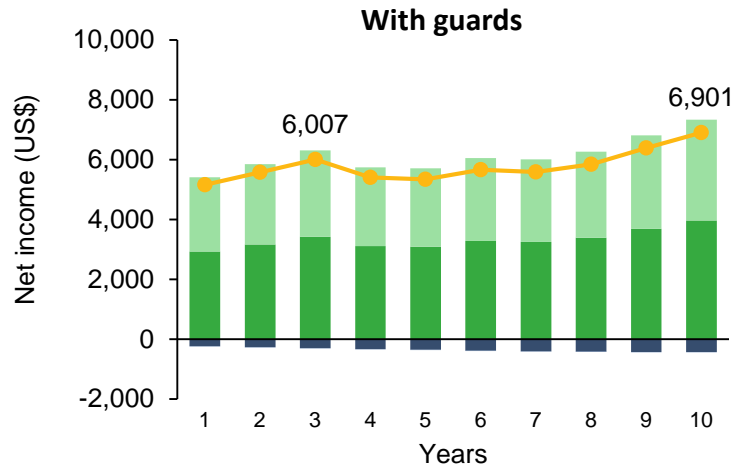
Segment 2

These vanilla farmers have all segment 1 competencies, and in addition are willing to diversify with cocoa. Besides all segment 1 services they receive support in cocoa diversification (training, nurseries).

Minimum criteria for this segment are that farmers must have land, time and motivation to diversify with cocoa.

Farmers can enter segment 2 directly if they possess the right capabilities, or "graduate" from segment 1.

Specific service impact: sensitivity analyses



Vanilla theft impact

When vanilla prices increase, theft pressure rises incentivizing farmers to harvest their vanilla too soon, resulting in lower quality. This reduces both the premium quality received and the curing ratio* achieved. Additionally, farmers cure less vanilla on farm.

When guards are patrolling, this effect is mitigated allowing the farmer to capture a larger share of the upside of the price increase. In the below graphs it can be seen that without guards, farmers have on average 28% lower annual income.

	Years of SDM	
	With guards	Without guards
Curing ratio	6 to 1	7 to 1
Vanilla theft	5% of harvest	20% of harvest
On farm curing	40%	20%
Premium quality	25%	10%

* Vanilla curing ratio is the weight ratio of green to cured vanilla

SDM projected outcomes and main learning questions

These results do not represent an official assessment of SDM success or failure by IDH or NewForesight. An indication is given based on the analysis done in this forward-looking study and assumptions provided by the SDM operator(s). Actual assessment should be done during and after the SDM, using measured data

SDM objectives	Projected outcomes
1 Increase vanilla production	<ul style="list-style-type: none"> Green vanilla production is expected to more than double, with 10-year average yields estimated to increase by 75%.
2 Increase on-farm value creation through vanilla curing	<ul style="list-style-type: none"> Cured vanilla output is estimated to increase significantly, from around 2kg/farm in the first year to 25+kg/farm by year 10 of the program.
3 Improve farmer incomes and resilience, including through diversification (cocoa)	<ul style="list-style-type: none"> Over 50% of farmers in the program are expected to diversify into cocoa besides vanilla. This creates income for farmers in times when earnings from vanilla sales are low.
4 Improve traceability and transparency of the program	<ul style="list-style-type: none"> This SDM study is intended to provide a clear baseline of expected results, against which progress will be measured in the future.
5 Remove child labor from cocoa and vanilla production	<ul style="list-style-type: none"> Social programs will raise awareness of child labor and other social issues, but may need to be supplemented with efforts within the supply chain itself for this objective to be achieved

Learning question	SDM insights
What are innovative aspects of the SDM?	Farmers can completely cure vanilla on-farm because of patrolling guards. Cocoa diversification has high potential in the region because of the stable and high price of Malagasy cocoa.
What is the overall impact of services on the farmer?	Farmer income is increased and more stable.
Under which conditions is there a positive impact on the farmer?	Farmers who adopt services are positively impacted. However, due to high vanilla prices farmers have less incentives to adopt; an estimated ~30% of farmers does not adopt services.

Key insights



Key drivers of success

- Adoption of practices
 - Full implementation of GAP and on-farm curing are the key determinants of higher farmer incomes.
- Theft reduction due to guards
 - Significant impact both on farmer income and the quality and sourced by the involved companies
- Diversification into cocoa .
 - Farmers are slightly better protected against volatile vanilla prices, and more importantly, diversification generates income for farmers in months without income from vanilla.



Key factors in replication

- Community involvement and empowerment is prominent in this SDM. This is an element that could be experimented with in SDMs that predominantly rely on implementers, NGOs etc. for service delivery.
- The shift from a crop focus (vanilla only) to a diversified farm focus could prove a valuable model for other crops and lead to more resilient farmer income.
- Guarding of crops to prevent stealing is another factor that may have benefits in other crops as for high-value commodities this is often a risk.



Key risks

- Volatile vanilla prices
 - If prices stay high, farmers may be less incentivized to diversify into cocoa.
 - At high prices, theft pressure remains high.
 - If prices drop significantly, farmers may be more inclined to harvest and sell prematurely.
- Theft is mitigated but remains a key risk
 - Especially in periods of high vanilla prices.
- Cyclones
 - Cyclones are infrequent but extremely impactful; in 2017 cyclone Enawo damaged ~30% of Malagasy vanilla crops.
- Financial sustainability
 - Continuation of the SDM will rely on case owners continuing to invest in it / see commercial benefits in it.



Opportunities for improvement

- With cocoa being a bulkier product than vanilla, the currently poorly developed infrastructure may be a limiting factor in bringing cocoa to market.
- While vanilla prices are high, this SDM could incentivize communal investment in infrastructure that will become necessary once production increases in 5-10 years' time.
- This SDM currently has relatively high overhead costs (almost 50% of total costs). Scaling up this SDM could bring down the costs per farmer by reducing the overhead costs per individual farmer.
- The SDM has a relatively high and static number of farmers who do not adopt, at around 33% of the program. Opportunities to gradually motivate these farmers to also adopt at least GAP could increase the impact of the SDM.

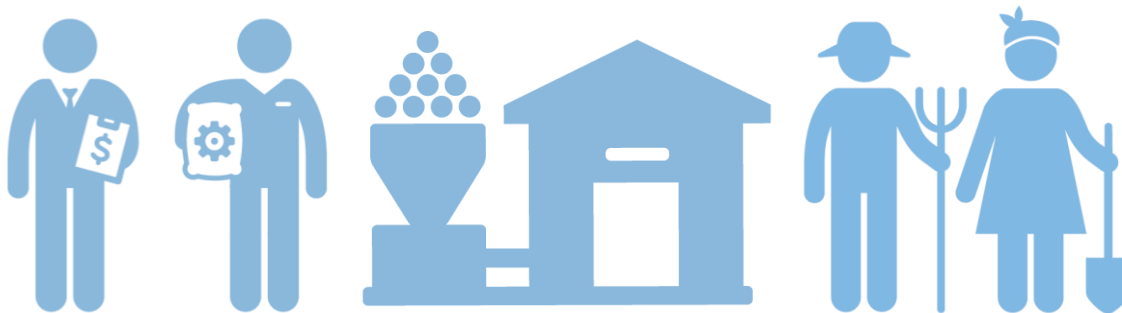


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For more information, see the [IDH Smallholder Engagement Report](#). This report, gathered by analyzing over 30 individual SDMs in 16 countries, provides insights into IDH's data-driven business analytics. The findings identify drivers of farmer resilience, cost reduction and financial sustainability in service models and the conditions needed for a supporting enabling environment.