SDM: Case Report SMS Kenya

Service Delivery Model assessment: short version

March 2020

Location: Kenya
Commodity: Coffee
Services: Farmer training & certification; Access to inputs; Marketing services; Financial services

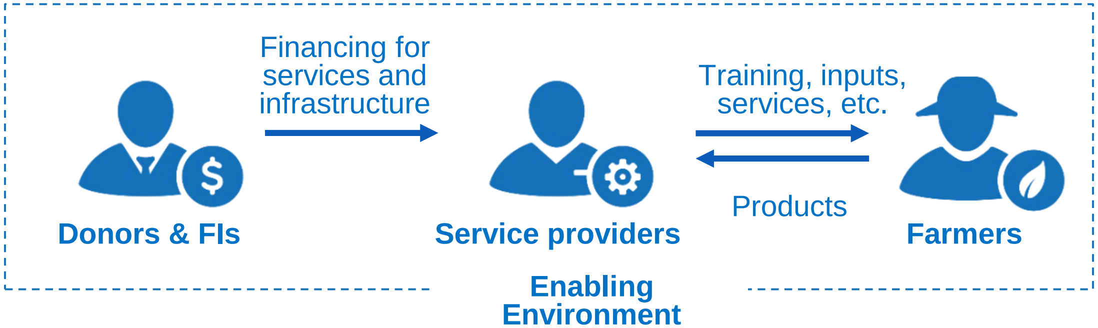
idh the sustainable trade initiative

NewForesight

SMS Sustainable Management Services

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, to improve their performance, and ultimately their profitability and livelihoods.



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

- **Better services** improve productivity, product quality, quality of life and social and environmental outcomes
- **Better outcomes**: improved productivity, income and resilience

SDM operator

- **Understand** your model's business case
- Gain insights to **improve** service delivery
- Develop **cost-effective** SDMs based on insights
- Identify opportunities for **innovation** and **access to finance**
- **Learn** from other public and private SDM operators operating across sectors/geographies
- **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 SMS Kenya SDM and objectives

General SDM information:

Location:	Kenya
Timing in analysis scope:	2019-2028
Scale (start of analysis):	42,936 farmers
Scale (end of analysis):	233,398 farmers
Funding:	Service provider, co-funded by IDH
SDM Archetype*:	Local off taker

- **Sustainable Management Services Kenya** (SMS Kenya) is an ECOM-owned company set up to implement sustainability solutions for ECOM's clients.
- SMS seeks to create a **shared value model** whereby it enables farmers to improve their farming practices while operating as a profitable and self-sufficient enterprise.
- In future, SMS seeks to explore opportunities **to expand into new services, business lines and crops.**
- SMS is increasingly focusing on key lenses such as **environment, gender and youth** which it considers as key enablers of a more sustainable farming sector in Kenya.

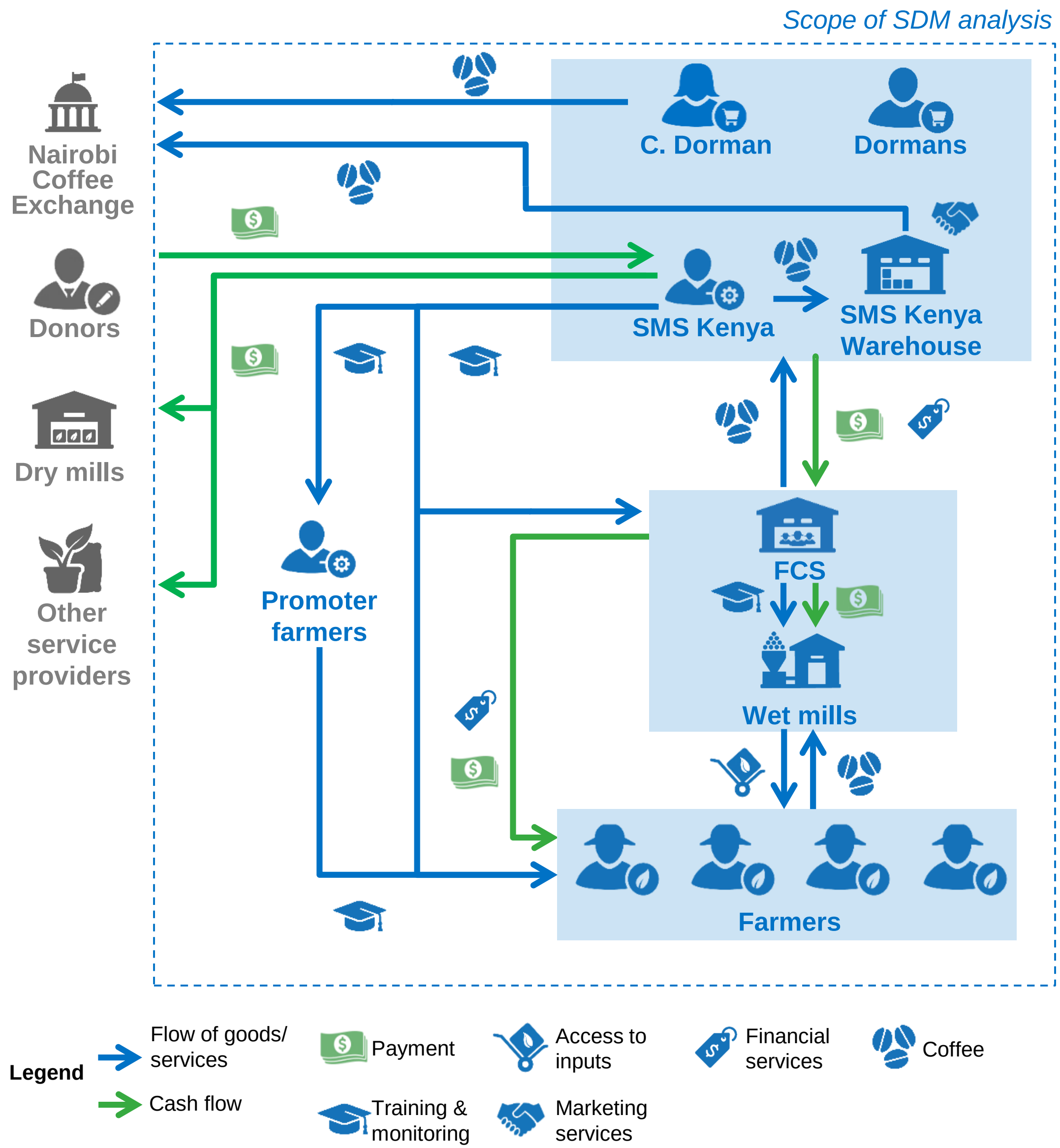
SDM objectives:

1. Contribute to the creation of a sustainable and thriving coffee sector
2. Increase production and quality of coffee grown by farmers on sustainably managed farms
3. Strengthen professionalism and capacities of FCSs to improve their service offering to farmers
4. Facilitate and improve market access and supply chain linkages for cooperatives and farmers

SDM rationale:

* For more info on SDM archetypes, see the IDH Smallholder Engagement Report

SDM and structure and enabling environment



C. Dorman is an international exporter. Dormans is a domestic roaster and retailer. Both are part of ECOM's holding structure

Enabling environment

Farmers are impacted by several factors within their enabling environment. Most important are:

1. Land ownership

Due to land inheritance customs, farm size has heavily diminished for smallholders, with the baseline land size at approximately 0.15 ha or 200 trees. Even with SDM support, farmers are limited by small farm size. SMS Kenya helps farmers to optimize land use, but total yield output remains low.

2. Social context

Coffee farmers are below the poverty line and under current conditions coffee cannot provide a living income. Access to cash to provide for other needs is a challenge. SMS Kenya facilitates cash advances through a line of credit that is managed by the FCS to support FCSs and farmers with production costs.

2. Trading system

83% of the coffee in Kenya is sold at auction. Growers retain legal ownership of the coffee until it is sold and paid for. The auction structure ensures maximum transparency in the supply chain. Marketing services ensure the highest price possible for the coffee delivered by FCSs by managing further processing and preserving quality until sale.

Services delivered and farmer segmentation

Farmer training/Certification

- SMS Kenya provides group training on GAP to farmers via promoter farmers which are trained by SMS Kenya. SMS Kenya also provides training at the FCS level.
- Currently, 50% of training costs are covered by external donors.
- SMS supports FCSs to become certified to the Rainforest Alliance, Utz Certified, Fairtrade and/or Organic standards.
- After sale at auction, SMS Kenya deducts certification costs from gross coffee sales and repays FCSs.

Financial services

- SMS provides advances to FCSs where up to 40% of expected coffee revenues can be requested.
- FCSs use advances to cover running costs and provide farmers with advances for services. SMS Kenya charges interest on the loan and aims to recover costs within one season.

Access to inputs

- SMS Kenya has a relationship with preferred service providers to provide quality, timely inputs to farmers.
- SMS Kenya prefinances the inputs and delivers them to FCSs who distribute inputs to farmers. After sale at auction, SMS Kenya deducts input costs from gross coffee sales and repays FCS who in turn settle the balance and repay farmers.

Marketing services

- SMS manages the process of sale of coffee from members after the wet mill which includes further processing, warehousing, marketing, sampling and representation at auction.
- SMS deducts a 2.2% marketing commission from the coffee repayments to FCSs.

Other services (TBD)

- SMS Kenya is exploring the potential of adding services such as processing machinery (hulling and pulping machinery for FCSs) and irrigation services for farmers.

Farmers are segmented in this SDM:

Segment 2

Crops grown:	Coffee
Farm size:	0.5 acre
Requirements:	FCS membership & Marketing service contract with SMS Kenya

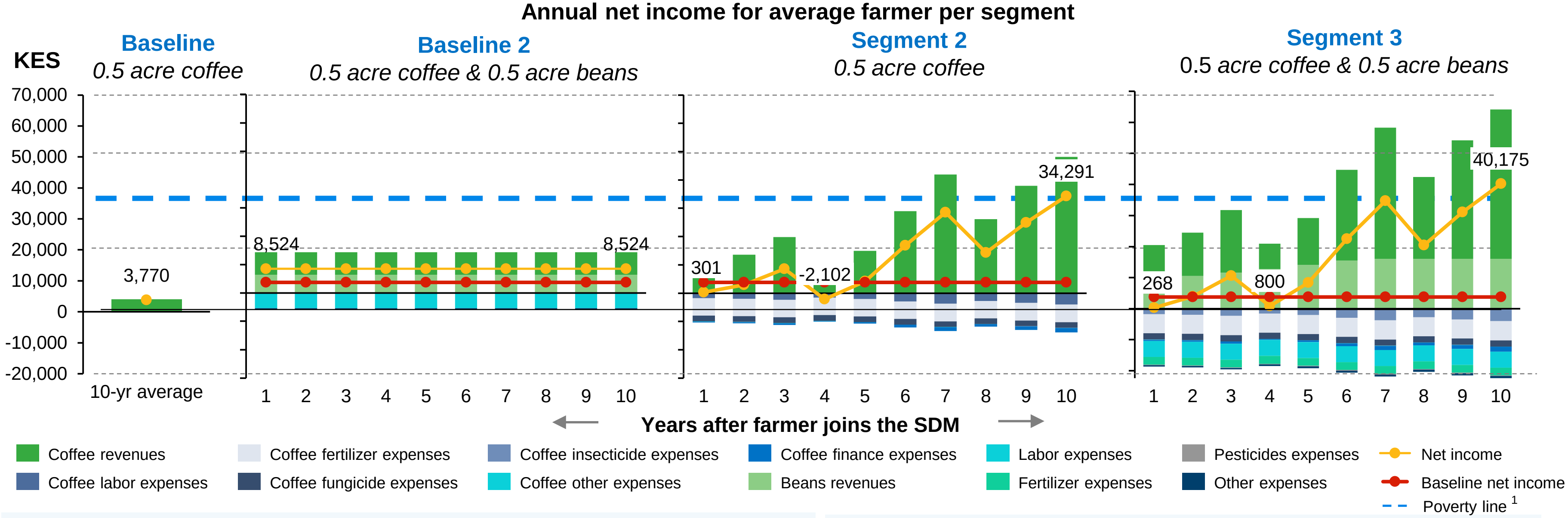
Segment 3

Crops grown:	Coffee & beans
Farm size:	0.5 acre
Requirements:	FCS membership & Marketing service contract with SMS Kenya

In this SDM, coffee farmers who receive the full service package from SMS Kenya ("SDM farmers") are compared to farmers who do not receive any services ("non-SDM farmers"). Although the main focus of this SDM is coffee farmers, SMS Kenya is considering whether to add support for diversification to the SDM to enhance farmer livelihoods. Thus, 2 additional segments have been considered: non-SDM farmers growing coffee and beans (Baseline 2), and SDM farmers growing coffee and beans (Segment 3).

Overall SDM impact: Farmer P&L

1 KES = 0.010 USD



Economic sustainability at farm level

Although coffee (and beans) are not farmers' sole income sources, coffee farming alone is unlikely to lift farmers out of poverty.

Impact of coffee farming: Baseline net income from coffee farming stays well below the poverty line due to low yields. Segment 2 income drops initially but when the benefits of rejuvenation and service use materialize, yield and quality improvements almost bring farmer incomes above the poverty line by Y10.

Impact of coffee and beans farming: Segment 3 farmers experience hardship in Y4 with a negative net income due to yield dips caused by the coffee rejuvenation cycle. Segment 3 farmers derive the most positive impact from the SDM and net income rises above the poverty line by Y10. Beans provide an income top-up when coffee income fluctuates.

Coffee farming as a business only makes sense when farmers make **sustained investments in their farms.** Low and fluctuating incomes for all segments shows diversification beyond coffee is key for farmer sustainability.

Main revenue drivers

Yields increase for SDM farmers as a result of training and proper rejuvenation. Yields increase from 3 to 8 kg cherry/tree by Y9 for Baseline 2 and 3 farmers compared to 0.5 kg/tree for Baseline.

Prices increase for SDM farmers due to increases in the proportion of higher quality cherry (AA and AB grades) in their yield output. This is a consequence of training and access to quality services.

Main cost drivers

Input costs (coffee) are substantial for SDM farmers (8,191 KES annually vs 0 for non-SDM farmers). The combination of high input costs and dips in the rejuvenation cycle result in difficult periods for farmers.

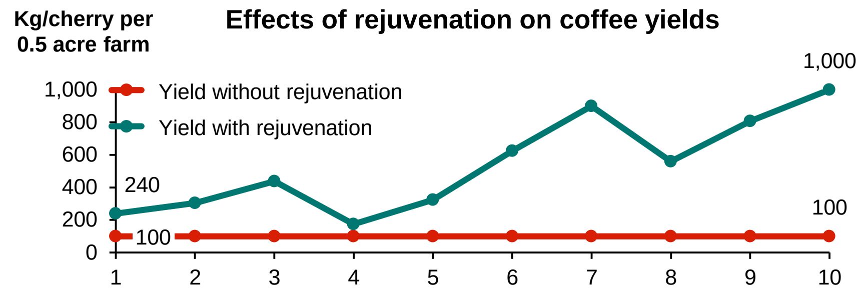
Labor costs are low for coffee but high for beans (half to a third of beans revenues). Yield improvements enable Segment 3 farmers to improve the revenue to cost ratio in later years.

1. Uses World Bank international poverty line of 1.90 USD/day, adjusted for PPP conversion factor 2011 (private consumption) of 50.1 KES/USD, and the average exchange rate of 101.7 KES/USD. No other household income sources nor income needed for dependents are considered.

There are two main determinants of income—yield and price*

Yields

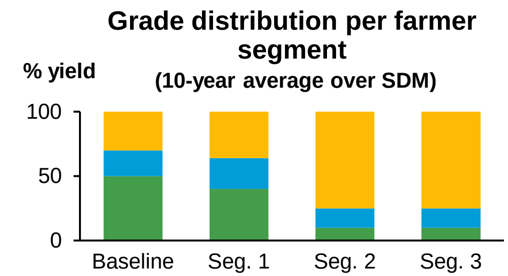
Without rejuvenation, a coffee tree yields 0.5-1 kg cherry/tree while, under proper management and rejuvenation, this can rise to 8 kg. Farmers rejuvenate 50% of stems at a time which gives a yield range of 240-1,000 kg cherry/farm. Variation due to the zero output years of rejuvenated trees results in income volatility for farmers.



Price

Coffee bean quality heavily impacts price—especially in the Kenyan market. GAP training enables farmers to increase the share of premium grades in their total output (~75% for SDM farmers compared to ~33% for non-SDM farmers). Farmers depend on good wet mill processing at the FCS level for coffee bean quality preservation as grading (and thus the price farmers receive) occurs later at the dry mill.

Grades	Price per kg green coffee
Grade E, PB, AA, AB	355 KES
Grade C, TT, T	208 KES
Mbuni Heavy, Light	70 KES



- In the lowest output years of the rejuvenation cycle (Y4), Segment 3 farmers need a weighted average auction price of at least 470 KES/kg green to sustain a profit. This is well above current prices, even for the premium quality grade (355 KES/kg green).
- A yield of 425 kg green is the minimum yield to shield farmers from price shocks and enables farmers to break even if prices drop to 200 KES/kg green.
- A higher distribution of premium grades can help to increase prices received by farmers. This can be done with effective training, high adoption, and FCS professionalism to enhance quality in the wet mill processing stages.

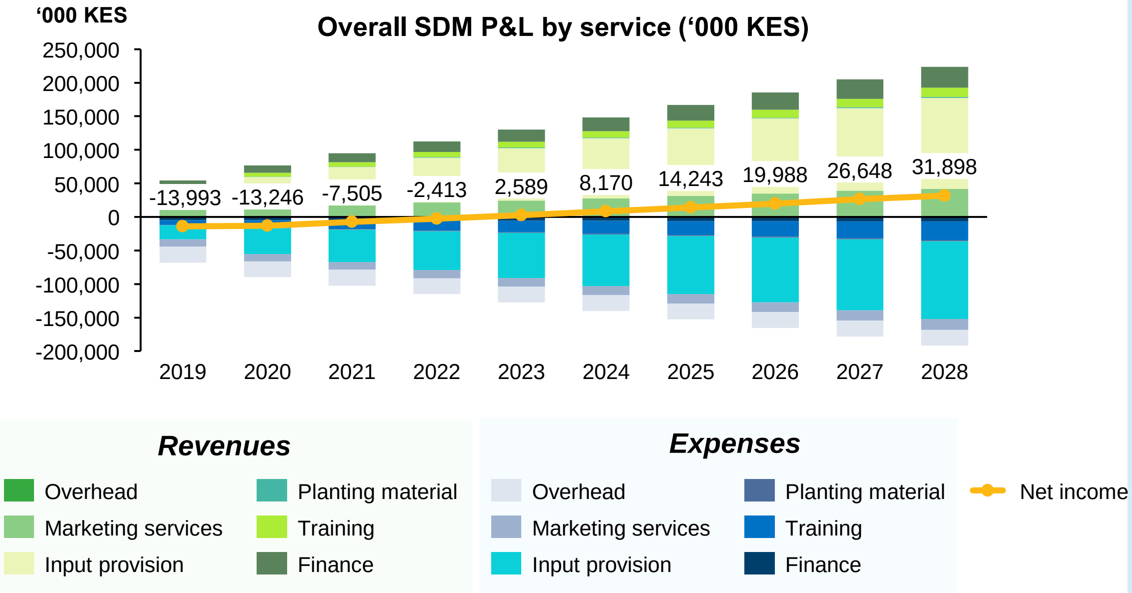
Segment 3 coffee net income under different price and yield scenarios, Y4*

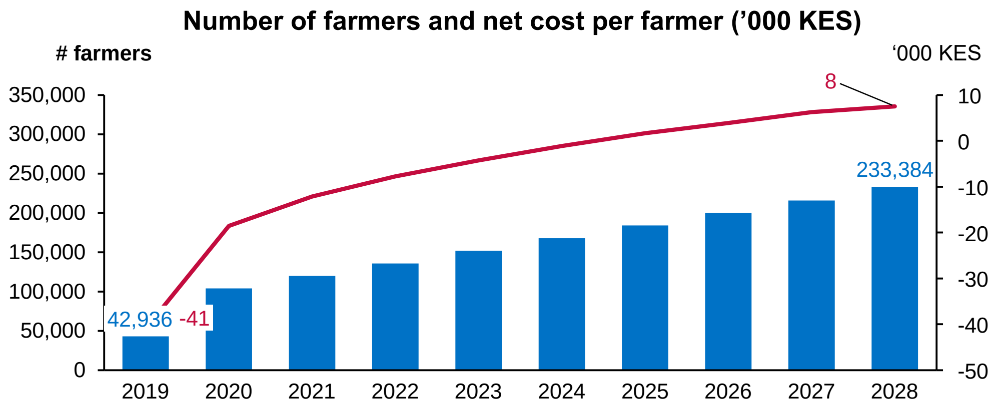
Current projection

Auction price premium grade (KES/kg green coffee)** ↓ / Yield (kg/0.5 acre) →	175	225	325	425	525	625
200	(5,423)	(4,310)	(2,082)	145	2,372	4,600
320	(2,770)	(898)	2,846	6,590	10,333	14,077
350	(2,106)	(45)	4,078	8,201	12,323	16,446
380	(1,443)	808	5,310	9,812	14,314	18,816
470	547	3,367	9,006	14,645	20,284	25,924
530	1,874	5,073	11,470	17,868	24,265	30,662

*Considers coffee farming only; ** This premium price is used as most coffee from SDM farmers is sold as premium and the other coffee prices are pegged to this number in the model.

SDM P&L, scale and sustainability





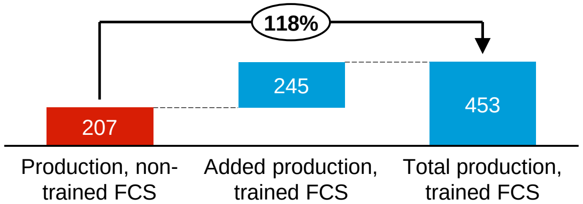
'000 KES/MT sourced									
-117	-133	-84	-53	-29	-8	11	25	40	48

Economic sustainability of the program

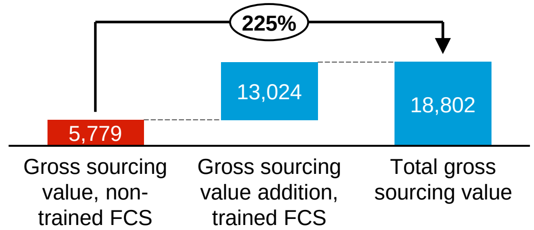
- In this overview, **actuals** have been used for 2019 and **projections** for the following 9 years based on SMS Kenya's coffee sourcing targets.
- To reach its sourcing targets, SMS Kenya needs to work with additional **trained FCSs** (146 by Y10) alongside the existing 25 non-trained FCSs**.** Although working with trained FCSs is costly given high training costs, SMS Kenya can source much higher volumes from trained FCSs.
- Based on modelled assumptions, the SDM makes an **annual average net profit of 6.6 million KES.** The SDM breaks even by Y5 with modest profits of ~2.6 million KES.
- Even as sourcing volumes considerably increase over the SDM, profitability is limited by **low coffee prices and a low marketing commission**. As the main SDM revenue driver is the commission on sourced coffee, these factors result in too low revenues relative to other loss-making parts of the business (notably, training and overhead).

Investing in FCSs to increase production and prices brings long-term gains for all; but value plummets if FCSs drop out

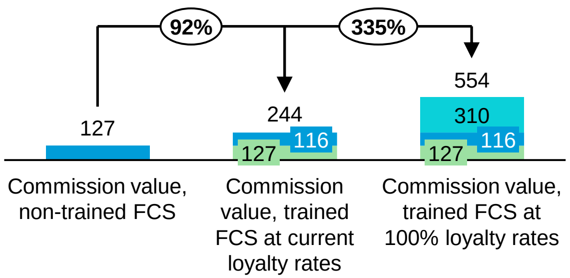
Production difference of non-trained vs trained and loyal FCS (MT cherry), SDM average*



Gross sourcing value of non-trained vs trained and loyal FCS ('000 KES), SDM average*



SMS Kenya commission value showing impact of loyalty ('000 KES), SDM average**



In **non-trained FCSs** with farmers not trained by SMS Kenya**, farmers have a low output of 207 MT cherry.** Lack of service access means farmers have low yields of 100-200 kg cherry/farm which are stagnant.

In trained FCSs which are loyal to SMS Kenya, farmers receive training and average GAP adoption rates within the FCS **improve over time as farmers are given sustained training exposure.** The maximum impact is for farmers adopting GAP from Y1 whose yield increases by 317% over the SDM.

The overall impact of training, adoption and loyalty is an **118% FCS production uplift** over the SDM. Crucially, this is only possible **if FCSs renew their contracts** and farmers receive consistent training in good practices.

After the marketing commission and other processing costs have been deducted, **FCSs receive the gross sourcing value of coffee sold at auction—**the major revenue source directly affecting their profitability.

Gross sourcing value is determined by 2 variables: production and prices. Trained FCSs have a **225% higher sourcing value** due to higher volumes and better quality.

For non-trained FCSs, **prolonged low production** due to lack of yield improvement is compounded by **low prices. The absence of FCS-level training** on wet mill processing and FCS management hampers quality preservation and results in **poorer quality beans** with lower auction value (355 vs 209 KES/kg green coffee or 3,40 USD/kg green coffee to 2.01 USD).

Isolating loyalty shows the huge influence that the FCS drop-out rate has on the SDM.

On an aggregate level, if all trained FCSs renewed their contracts, **SMS Kenya would increase its commission value by 335%.**

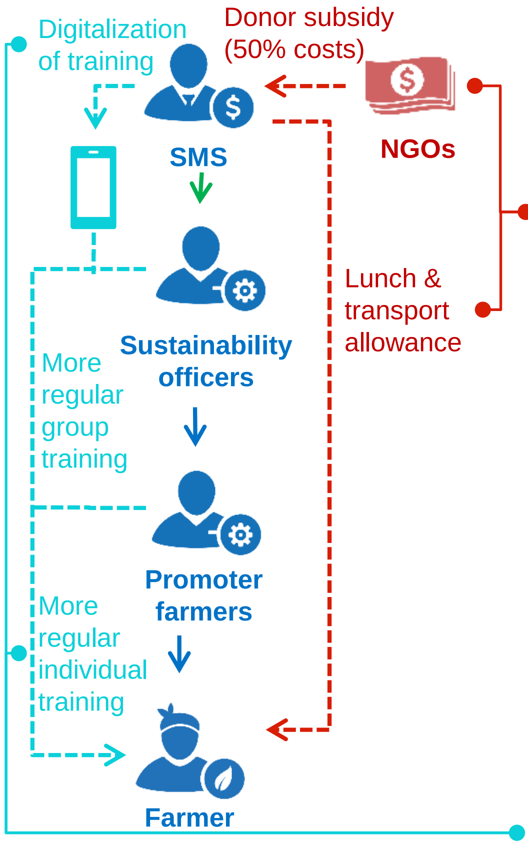
However, **at current FCS drop-out rates (50% of FCSs dropping out every year),** value addition falls short of this potential. In this scenario, there is still higher production and prices because of the influence of renewing FCSs on the average. The result is a commission value increase of 92%.

To achieve closer to potential value creation, SMS Kenya should **set FCS loyalty targets** and focus on a **shared value model** focused on long-term partnerships and incentivizing loyalty.

***Figures for trained FCSs are based on 10-year average results for FCSs if they were to renew their contract with SMS Kenya every year (at existing adoption rates).*
***Figures are based on the average sourcing value of all trained FSCs (both renewing and dropping out) working with SMS Kenya under current loyalty assumptions.*

To increase loyalty and adoption, SMS could consider restructuring the current model of its training service

Comparison of different training service models for the SDM



Current training model

- Two key aspects in the current training model are significant revenue and cost drivers:
  - **Donor funding:** a revenue driver which covers 50% of total training costs.
  - **Lunch allowance:** a (variable) cost driver paid per farmer per training (50 KES/farmer).

Training expenses as percentage of total training cost

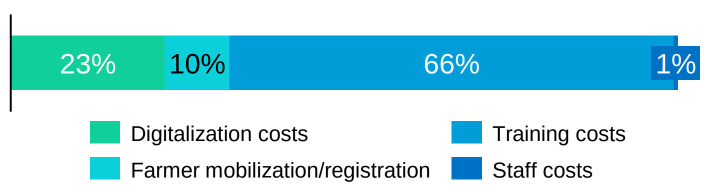
Average farmer yield per FCS
(adoption rate of 42%)

164*
kg cherry

New training model

- In the new training model, there are some key changes:
  - **No monetary incentives:** farmers do not get paid a lunch allowance for attending training.
  - **Higher intensity training:** farmers receive 4 individual and 4 group sessions per year.
  - **Digital model:** training is digitalized to enable M&E and results tracking to improve performance. A call-center provides on-demand advice to farmers and extension staff.

Training expenses as percentage of total training cost



Average farmer yield per FCS
(adoption rate of 64%)

357*
kg cherry

**Figures are based on the average annual aggregate sourcing value of all trained FSCs working with SMS Kenya which is divided by the number of farmers per FCS to calculate the average yield per farmer. The figure therefore accounts for the impact of adoption and loyalty rates of farmers/FCSs on total sourcing which change based on the training model used.*

SDM outcomes and main learning questions

These are not an official assessment of SDM success or failure by IDH or NewForesight, but an indication based only on the analysis done in this forward-looking study, and on assumptions provided by the case owner(s). Actual assessment of success of the SDM should be conducted during and after the SDM is conducted using measured results

SDM objectives	Outcomes
1 **Contribute to the creation of a sustainable and thriving coffee sector**	• Both farmers & FCS receive higher incomes from coffee and improve long-term business case. • SMS Kenya secure supply base, contribute to smallholder impact, and gain insights.
2 **Increase production and quality of coffee grown by farmers on sustainably managed farms**	• Both farmers & FCS have lower cost of production, higher sales revenues & premiums. Due to farmer diversification, farmers improve yields and FCS has higher revenues. • SMS Kenya improves long-term supply security, have higher quantity and quality of coffee sold, and have potential for diversified business lines.
3 **Strengthen professionalism and capacities of FCSs to improve their service offering to farmers**	• Both farmers & FCS strengthen commercial viability, have efficient aggregation and processing services, and social capital. • SMS Kenya has a growth and loyalty of farmer and supplier base, as well as an efficient and reliable procurement
4 **Facilitate and improve market access and supply chain linkages for cooperatives and farmers**	• Both famers and FCS Growth and loyalty of farmer and supplier base, efficient and reliable procurement • SMS Kenya has a growth and loyalty of the farmer and supplier base, as well as higher quality produce

Learning question	SDM insights
How financially sustainable is the current and projected SDM of SMS Kenya?	The SDMs viability is for the most part dependent on significant growth assumptions. Despite increasing volumes, profitability is capped by two factors: low coffee prices and a low marketing commission.
What is the business case in offering SMS Kenya coffee projects targeted at youth? **In what ways can the SMS Kenya model be more gender intentional?**	Youth engagement is key in a sector with an ageing farmer population and a need for (technological) innovation to ensure a future state of efficient and sustainable agriculture. Piloting youth-targeted programs could enable SMS Kenya to validate hypotheses about youth-managed farms, which will require the introduction of an M&E system with youth disaggregated data to monitor and analyze trends. Similarly, an M&E system can support the development of gender intentionality in the SDM, by expanding gender data collection on FCS members to the numbers of women in management positions and accessing services. This knowledge is the precursor for SMS Kenya to address access gaps and capitalize on equity and economic advancements in the SDM.

Key insights

Key drivers of success

- **Training adoption and FCS loyalty:** The main success factor for SMS Kenya is to increase the gross value of sourced coffee. Training is a key enabler for driving higher sourcing volumes.
- **Improved loyalty:** To incentivize loyalty, SMS Kenya can expand the suite of current services. A preliminary analysis of potential services shows value addition opportunities for irrigation and pulping.
- **Ancillary business lines:** A more integrated and structural approach to service delivery can enable SMS Kenya to capture synergies and value capitalization.
- **FCS training:** Key to ensure quality preservation and channel services efficiently to farmers.

Key factors in replication

- **Business model thinking:** As SMS Kenya does not have secure grant funding for future, SDM must incorporate a more diversified, revenue-generating service offering to ensure long-term sustainable growth.
- **Gender and youth focus:** To maximize the representation of women and youth requires a targeted strategy.
- **Prioritization and further research:** Further research on the opportunity pathways can help to inform a prioritization and ranking of those with the most potential to improve SDM profitability and resilience. Piloting priority opportunity pathways with selected FCSs can help SMS Kenya to adapt before setting up the service for scale.

Key risks

- **Enabling environment:** Farmers having a poor business case causes a risk as SMS is assumed to increase coffee volumes. This is exacerbated by regulatory changes which would require an overhaul of ECOM's structure.
- **Training:** The viability of training depends on external funding to enable scale. Drying up of funding would heavily affect the SDM.
- **FCS loyalty:** FCSs dropping out is a huge value drainer in the SDM. If the FCS drops out then SMS Kenya cannot reap any of the long-term benefits of its investments.
- **Lack of data:** presents challenges for assessing and monitoring SDM progress.
- **Departmental silos:** To reach sourcing targets requires better integration between the sustainability department with other parts of the business (e.g. finance, procurement).

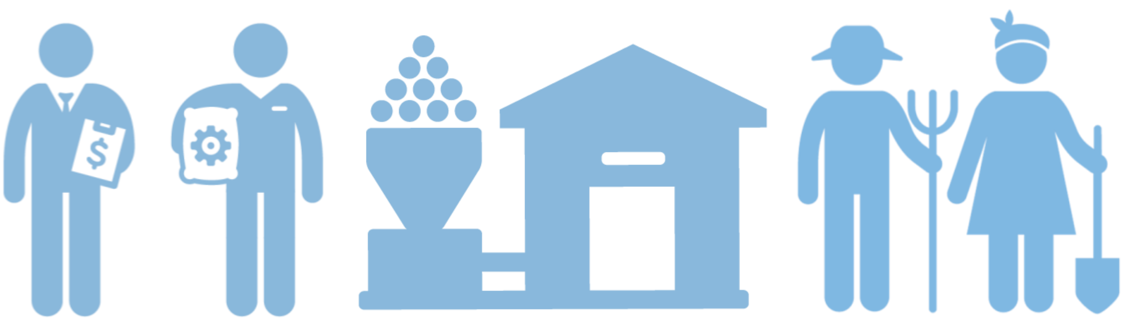
Opportunities for improvement

- **Crop diversification:** SMS Kenya can use diversification to improve farmer livelihoods while using this as an opportunity to diversify its own operations.
- **Develop long term relationships:** SMS Kenya can focus on developing long-term relationships with FCSs through quality service provision and financial and in-kind investment, such as providing new processing equipment such as pulpers.
- **Focus on coffee quality:** Shifting the focus to quality alongside volumes (through opportunity pathways such as pulping) can help to secure higher prices to benefit SMS Kenya, FCSs and farmers.

Richard Muli
Director Business Engagement

Jesse Arnon
Senior Consultant

Jennifer Morton
Consultant



For more information and insights on SDM's, see the [IDH Smallholder Engagement Report]