

SDM Case Report:  
**C Dorman Rwanda Ltd, Rwanda**

Service Delivery Model Assessment  
2019 - 2020



## Executive summary (1/2)



C Dorman Rwanda Ltd (Dormans) sources, processes and sells / exports green coffee to domestic and international buyers. All the coffee cherries processed comes directly from smallholder farmers and Dormans operates a Service Delivery Model (SDM) to be able to better engage with them. To scale its business and improve its profitability, Dormans plans to setup more washing stations and expand the number of farmers it sources from.



Taylors of Harrogate (Taylors) is an independent, family-owned tea and coffee business based in the heart of Yorkshire, UK with internationally recognized brands such as Yorkshire Tea and Taylors Coffee. With a global supply base of over a million producers across the world, Taylors aims to ensure that their relationships with tea and coffee producers enables economic growth, supports thriving communities and strengthens environmental resilience within the communities and the landscapes they source from. Taylors buys independently certified, high quality Rwandan coffee from Dormans and partners with them in a way that aims to enable a decent life and sustainable livelihood for farmers in the Taylors value chain.

### **Dormans has a positive business case for investing in the SDM**

- The study reveals that the SDM is profitable when commercial (sourcing, processing and sales) activities are taken into consideration. Over the period 2019 to 2025, Dormans is projected to make cumulative net income from green bean sales. The profits per farmer improves over time and by 2025 an SDM farmer contributes to US\$ 110 of annual profits to Dormans.
- Sourcing from smallholder farmers is a critical element of Dormans business strategy and the SDM contributes towards making their engagement with smallholder farmers effective and efficient. The SDM investments are significant and account for nearly 40% of their total costs. However, it contributes in a significant way towards increasing farm yields and growing Dormans sourcing base.

## Executive summary (2/2)

### **Coffee farmers can receive significant benefits from participating the SDM**

- A coffee farmer who has been in the SDM for 10 years and receives all its services can earn up to US\$ 1,034 net income per year. This is significantly higher than the US\$ 156 they are estimated to earn when they start participating in the SDM. However, it is still below the living income level of US\$ 1,560 for a typical family in Rwanda.
- Dormans also provides a select few farmers with cows, which can boost their incomes by up to US\$ 3,000 per year. However, not all farmers have the capacity to benefit from this and need to be chosen carefully.

*Note: All figures in this report are based on projections. Assumptions behind these projections can be found in the appendix section of this report.*

# IDH introduction

## Importance of Service Delivery

Agriculture plays a key role in the wellbeing of people and planet. 70% of the rural poor rely on the sector for income and employment. Agriculture also contributes to climate change, which threatens the long-term viability of global food supply. To earn adequate livelihoods without contributing to environmental degradation, farmers need access to affordable high-quality goods, services, and technologies.

Service Delivery Models (SDMs) are supply chain structures which provide farmers with services such as training, access to inputs, finance and information. SDMs can sustainably increase the performance of farms while providing a business opportunity for the service provider.

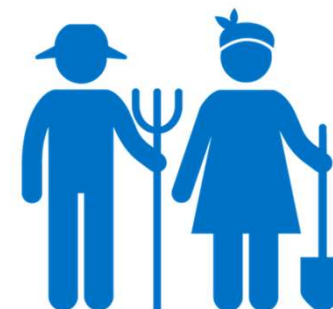
A solid understanding of the relation between impact on the farmer and impact on the service provider's business brings new strategies for operating and funding service delivery, making the model more sustainable, less dependent on external funding and more commercially viable.

## About this study

To accelerate this process, IDH is leveraging its strength as a convener of key public-private partnerships to gain better insight into the effectiveness of SDMs. IDH developed a systematic, data-driven approach to understand and improve these models. The approach makes the business case for service delivery to investors, service providers, and farmers. By further prototyping efficiency improvements in service delivery, IDH aims to catalyze innovations in service delivery that positively impact people, planet, and profit.

## Thanks

IDH would like to express its sincere thanks to both Dormans and Taylors for their openness and willingness to partner through this study. By providing insight into their model and critical feedback on our approach, Dormans and Taylors are helping to pave the way for service delivery that is beneficial and sustainable for farmers and providers.



# Reflection on SDM learning questions (1/2)

In this SDM study, a set of tailored learning questions were analyzed:

- |   |  |
|---|--|
| <p>1. Who are the key actors in this SDM and what is the relationship between them?</p>   | <ul style="list-style-type: none"><li>• <b>Dormans is the lead actor in the SDM and plays a dominant role.</b> All services in the SDM are <b>facilitated by Dormans and, in most cases, also financed</b> by Dormans.</li><li>• Other actors such as NAEB, fertilizer suppliers and independent co-operatives have an active role to play in the SDM. However, Dormans play the lead role in integrating these actors into the services delivered by the SDM.</li></ul>   |
| <p>2. What services are delivered through the SDM and how do these services align with Dormans overall business operations?</p> | <ul style="list-style-type: none"><li>• The SDM is well linked and integrated into Dormans sourcing operations. Most services are focused on supporting production and the offtake of cherries, which are directly provided to individual farmers.</li><li>• The SDM can support growing Dormans farmer base from 7,000 farmers in 2019 to 14,000 farmers by 2020. This has the potential to <b>increase Dorman's green bean sales / export volumes by just over four time from 2019 to 2025.</b></li><li>• In order to achieve this growth, Dormans will need to increase its number of wet mills from 9 in 2019 to 15 in 2025 and increase the independent cooperatives it works with from 3 in 2019 to 11 in 2025</li><li>• Additionally, the SDM provides services to independent cooperatives and funds community level initiatives that benefits everyone in that village rather than just the coffee farmers.</li></ul> |
| <p>3. Is the SDM financially viable and what are the key factors influencing this?</p>  | <ul style="list-style-type: none"><li>• Currently the SDM <b>operates purely as a cost center</b> and there are no services revenues or other sources of income within the SDM</li><li>• The single biggest cost of the SDM is from <b>inputs (primarily fertilizer provision), which accounts for nearly 50% of the total costs.</b> None of the cost of providing fertilizers to the farmers is directly recovered within the SDM</li><li>• Considering green bean revenues as well as all business costs (sourcing, processing and SDM), Dormans is <b>projected to make a profit margin of 7 to 9%</b> between 2020 and 2025</li></ul>   |

## Reflection on SDM learning questions (2/2)

In this SDM study, a set of tailored learning questions were analyzed:

- |   |  |
|---|--|
| <b>4.</b> What value does the SDM deliver to Dormans business?  | <ul style="list-style-type: none"><li>• The SDM can support Dormans in growing its green bean sales volumes 4-fold from 2019 to 2025. However, the <b>net margins of the business are projected to remain between 7% - 9%</b> despite the growth in volumes. This is mainly because the sourcing and SDM costs to Dormans scale linearly with increase in coffee cherry volumes</li></ul>  |
| <b>5.</b> What is the impact of the SDM on farmers income and cashflow?   | <ul style="list-style-type: none"><li>• Segment 2, 3 and 4 farmers all receive similar coffee-related services from Dormans, which help farmers increase the number of trees on their farms as well as increase the yield per tree</li><li>• A segment 2 or 3 farmer who meets the projected growth in trees and yields can increase his or <b>her coffee income from US\$ 156 to US\$950 over a 10-year period</b> of participation in the SDM</li><li>• The SDM farmers have positive cash flows in most months of the year. The net cashflow for these farmers does not go negative at any time during the year</li></ul>   |
| <b>6.</b> Can or does the SDM contribute towards farmers earning a living income? Does the SDM contribute to long-term financial resilience of farmers? | <ul style="list-style-type: none"><li>• Even farmers who have been in the SDM for 10 years and have improved the scale and condition of the farmers are <b>not projected to meet the living income benchmark<sup>1</sup></b> from coffee alone. A segment 3 farmer who has increased the number of coffee trees on his / her farm from 575 to 1,250 and the yield per tree from 3kg to 4.5kg over a 10-year period of participation in the SDM still <b>makes only about 65% - 70% of a living income</b></li><li>• Farmers who have been provided with a cow have the potential to make significantly higher incomes. Cows provide 3 different revenues sources – milk, manure and calf sales.</li><li>• Farmers with cows are projected to make <b>US\$772 of additional income within 3 years and up to US\$ 3,000 of additional income by year 4 or 5. This increase in income can comfortably push them over the living income</b> range for Rwanda</li></ul> |
| <b>7.</b> How can the SDM enable Dormans to build a resilient and diversified revenue stream?   | <ul style="list-style-type: none"><li>• There are currently no additional revenue streams to Dormans from the SDM. The SDM is a cost center and Dormans incurs significant expenses to implement it. Dormans would need to look for avenues to recover SDM costs before it can look at the SDM as a revenue earner. One of the potential areas to start could be inputs and fertilizer provision, which accounts for the biggest cost of the SDM.</li></ul>  |

Sources: 1) Retrieved from <https://wageindicator.org/salary/living-wage/rwanda-living-wage-series-september-2019>

# Overview of SDM Services



## Farmer Training

- Farmers receive training on GAP and good processing practices. These are done through a combination of internal and external trainers and demo plots are used.



## Planting material provision

- CDL pays for setting up and operating of one nursery for each washing station for providing both coffee seedlings and shade plant seedlings



## Inputs provision

- CDL contributes into inputs fund of NAEB (National Agriculture Export Development Board) for providing fertilizers and pesticides. CDL also buys fertilizers in open market and supplies to farmers



## Certification

- CDL helps certification (UTZ, RFA, Café practices etc) of farms by training farmers, hiring internal inspectors to inspect farms in adhering to certification standards and finally paying for external certification auditors



## Collection & Transportation

- Coffee washing station manager manages transport and delivery of cherry from farms to washing station transported either directly by farmer or through collection agents.



## Management information systems

- SMS Integrity and Advanced coffee crop optimization for rural development (ACCORD) are the major digital systems used by CDL for delivering services to farmers



## Cooperative services

- CDL provides various services such as a) extending working capital loans b) training and advisory services, c) milling and storage, d) handling export process and e) advocacy for certification.

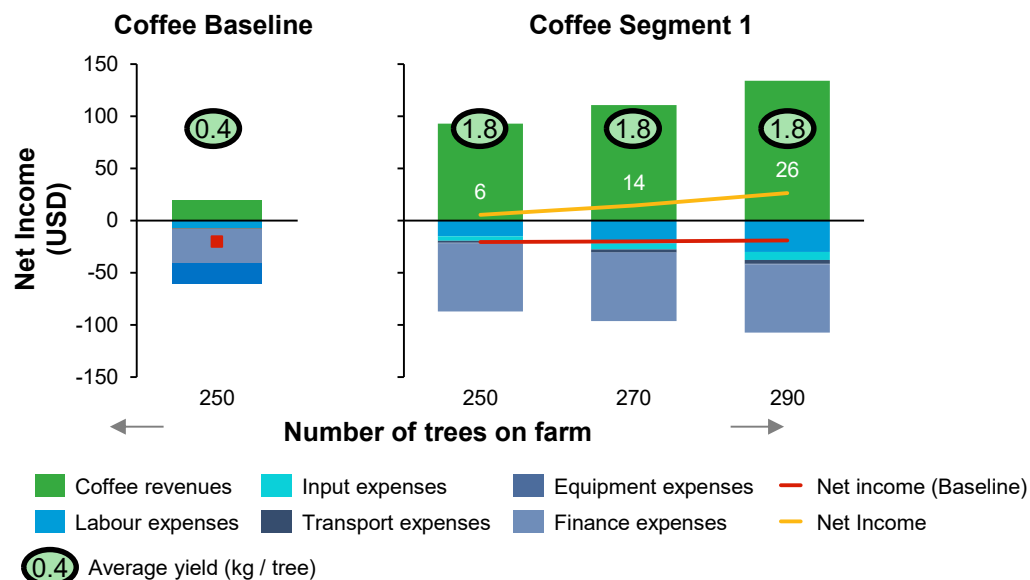


## Sustainability initiative

- CDL sustainability initiative project management team identifies suitable projects in consultation with community, prepares project plan for donor approval and funding as well as oversees execution of the projects .



# Coffee farmer P&Ls: overall impact (1/3)



**Segment-1 annual net income (USD/year), year 5 of SDM**

Interest rate ↓

Loan Size (RWF/Season) →

Interest rate	60,000	70,000	80,000	90,000	100,000
20%	73	72	71	70	69
40%	66	64	62	60	58
60%	60	57	53	50	47
80%	53	49	45	40	36
100%	47	41	36	31	25
120%	40	34	27	21	14

Current projection

## Economic sustainability at farm level

The baseline farmer does not receive any SDM services. As a result the condition of the farm and the net income of the farmer does not improve over time. The net income of a baseline farmer is negative, primarily due to high interest rates they pay on loans. If the financing costs are removed a baseline farmer would make a positive net income of about USD 13 per year.

A segment 1 farmer receives some support from the co-operative in the form of seedlings, which results in the number of trees on the farm increasing over time. When a segment 1 farmer joins a co-operative, he / she has an average of 250 trees. This can increase to about 290 trees over a period of 8-10 years. Segment 1 farmers don't receive most of the other SDM services and their average yield remains the same (about 1.8 kg / tree) over time. As the number of trees on their farms increase their net income can increase from 6 USD / year (for 250 trees) to about 26 USD / year for 290 trees.

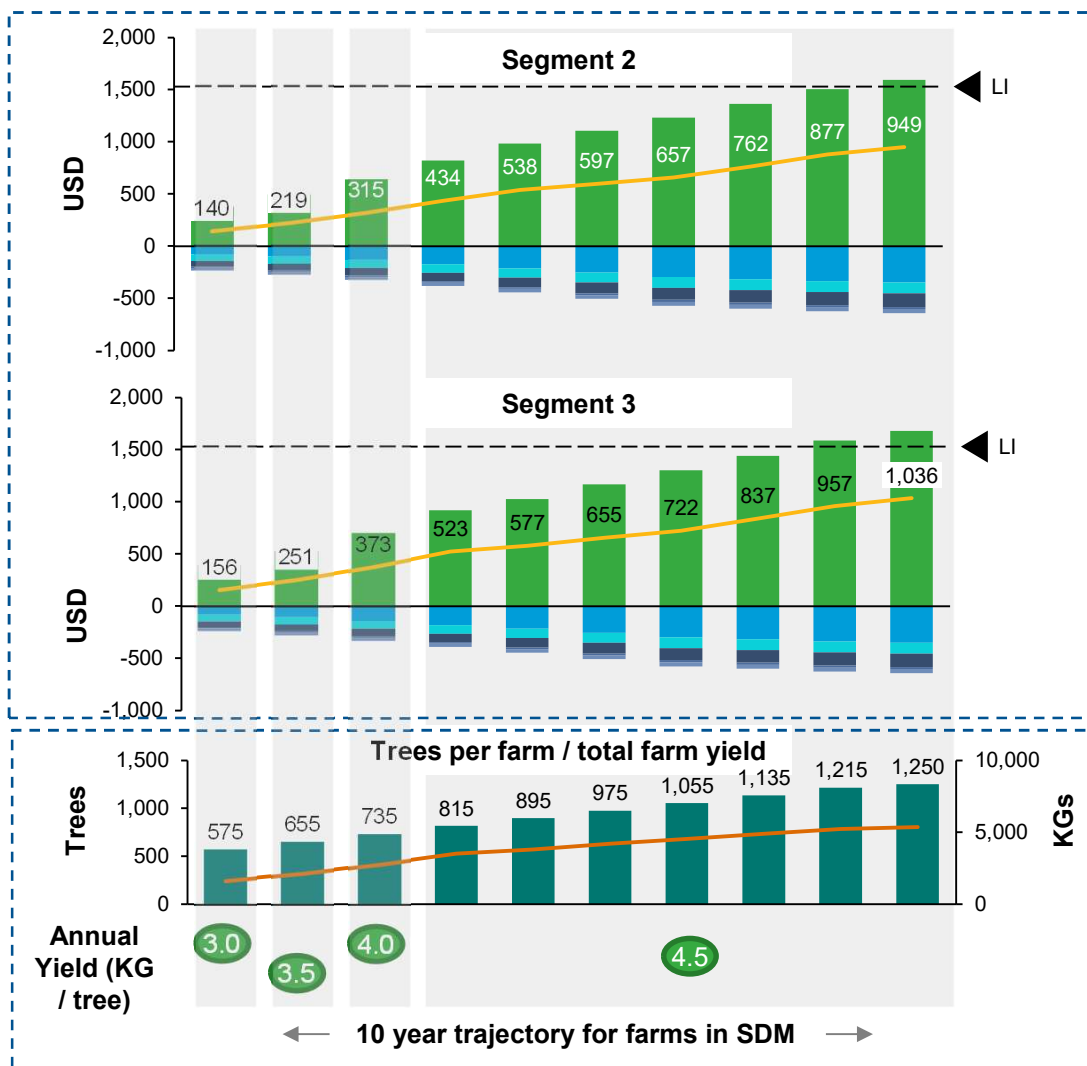
## Impact of loans on farmer income

Many segment 1 farmers borrow money to cover production costs and the cost of financing (interest rates on loans) can be significant. As they receive loans from local money-lenders they pay interest rates as high as 10% a month (120% a year). For a segment 1 farmer with 270 trees, the cost of financing can account for about 67% of their total costs and about 58% of their revenues.

If the cost of these loans are reduced or if the amount of money they need to borrow is brought down, segment 1 farmers can realize significantly higher net incomes from their farms, as shown in the graph above. The sensitivity of net incomes to interest rates is high. For example, if the interest rates are reduced by 50% (from 10% to 5% a month) the net income increases by over 330% (from 14 USD to 47 USD for a farmer with RWF 100,000 in loans).



# Coffee farmer P&Ls: overall impact (2/3)



## Impact of the SDM on Farm P&L

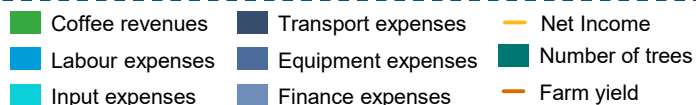
Segment 2 and segment 3 farmers have similar profiles and receive similar on-farm services through the Dormans SDM.

The SDM services support farmers in both segments improve the yield of their trees as well as increase the number of trees on their farms. The graphs alongside show a 10 year trajectory for a segment 2 and 3 farmers after joining the Dormans SDM. Over this period the number of trees on farm can increase from an average of about 575 to about 1,250. The average annual yield for a segment 2 and 3 farmer entering the SDM is about 3 kg / tree. The SDM services help increase this to about 4.5 kg / tree over a 3 to 4 year period. As a result, the total farm yield can increase over 320% from 1,725 KG to 5,654 KG per year.

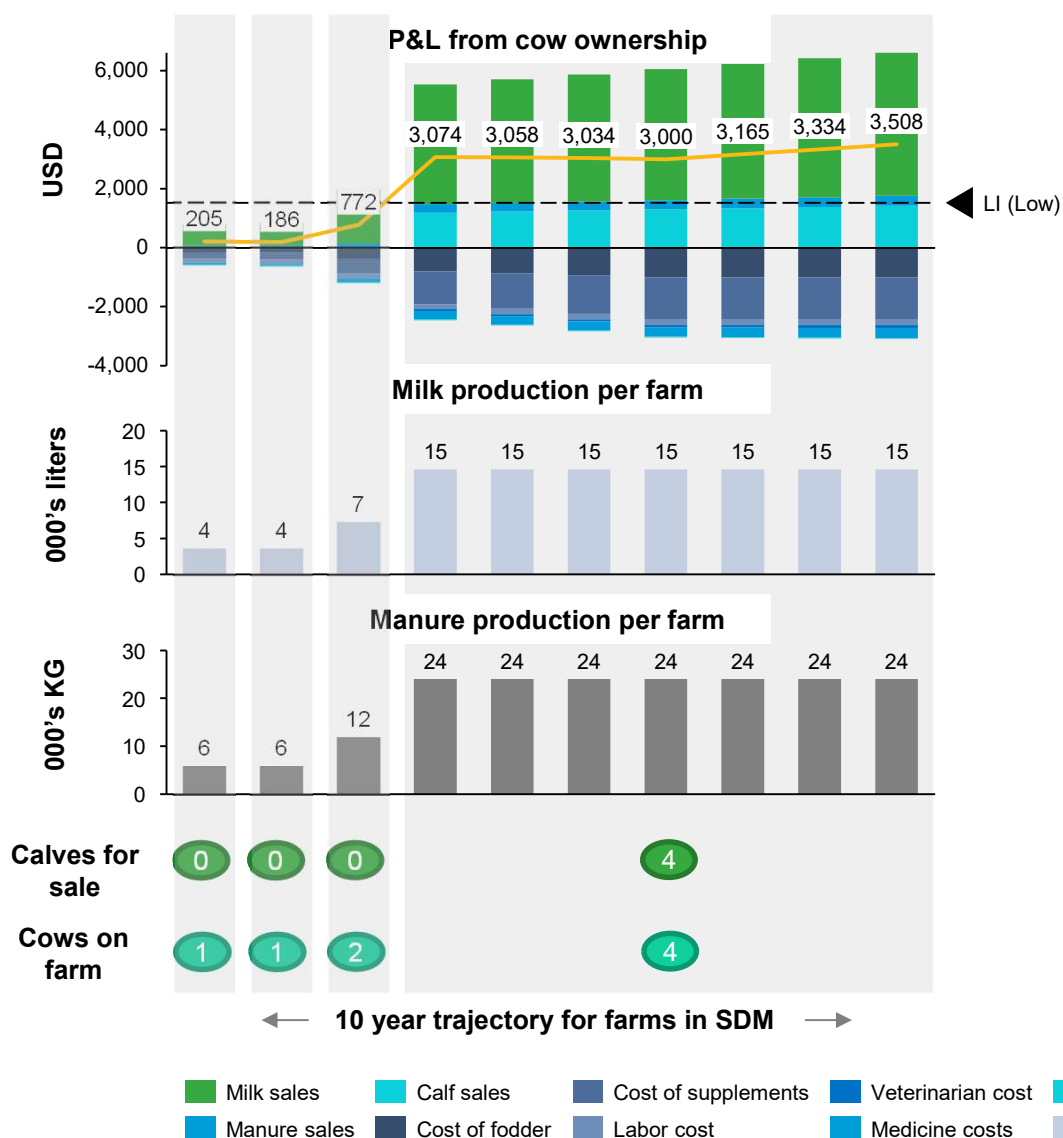
A segment 3 farmers has a net income of about USD 156 (and USD 140 for segment 2) when he or she enters the Dormans SDM. As a result of increases in yields and number of trees (as well as increases in farm gate price staying in line with estimated inflation rate) the net income can reach USD 1,036 for a segment 3 farmers (USD 949 for segment 2).

## Living Income

USD 1530 per year is taken to be the living income for a typical farm in Rwanda based on data available from wageindicator.org. Farmers who have gone through the SDM trajectory and increased their average yields to 4.5 kg / tree and number of trees to 1,250 per farm still fall about USD 500 (32%) short of a living income as shown by the line titled LI on the adjacent graphs.



# Coffee farmer P&Ls: overall impact (3/3)



## Farm impact from cow ownership

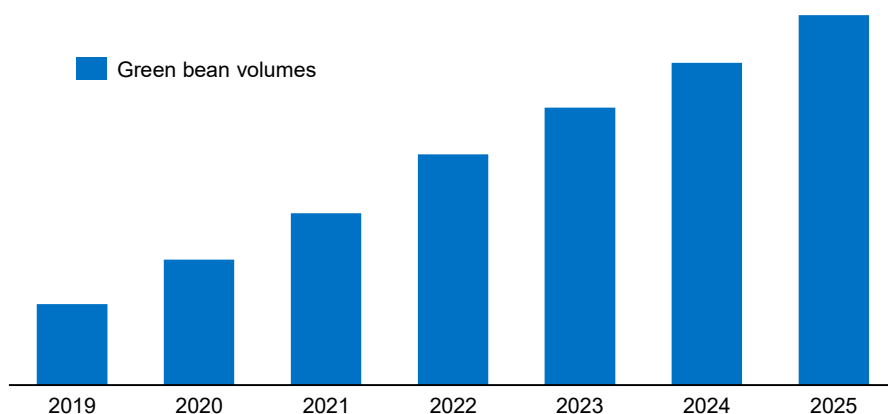
Segment 4 farmers have similar coffee income as segment 3 farmers. However, they have additional revenue streams (and expenses) arising from cow ownership. Providing a segment 4 farmer with a cow can give him or her annual revenues over USD 3,000 within 4-5 years.

The primary driver of revenues are milk sales. As the cows multiply and there are more milk producing cows per farmer, the milk production per farm increases from 3,650 liters / year for one cow up to 14,600 liters / year for 4 cows. Farmers also generate revenues from the sales of calves. As part of the Dormans program, farmers are required to give the first calf from their cow to another farmer. It is assumed that they will keep the next 3 calves to increase the total number of cows to 4 within 4 to 5 years. At this point the farm has 4 milk producing cows plus 4 calves per year to be sold, which contributes to the farmers income.

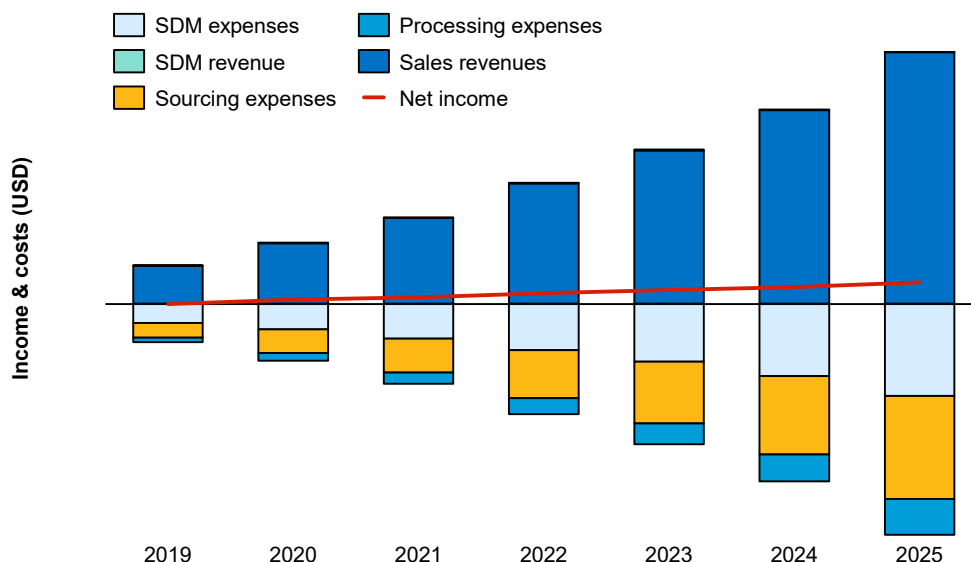
Manure produced by the cows can also be sold and forms the third revenue stream for farmers. Manure production goes up from 6 MT / year for one cow to 24 MT / year when the farmers has 4 cows.

Having 4 milk producing cows plus for calves for sale per year provides a net income that is above the living income figure for Rwanda. However, not all coffee farmers are by default suitable candidates to receive cows. Farmers need to have enough extra land for grazing of cows as well as some capital (around US\$ 25 per year) to invest in building a maintaining a shed. Owning cows can also increase the risk to farmers as they incur annual costs of about US\$ 2,840 by year 4 of ownership. Maintaining the health of milk producing cows requires attention from the farmers and illness or the death of a cow will have significant impact on the current and future income.

# Business P&L: costs and revenues



CDL's P&L including sourcing income (in USD)



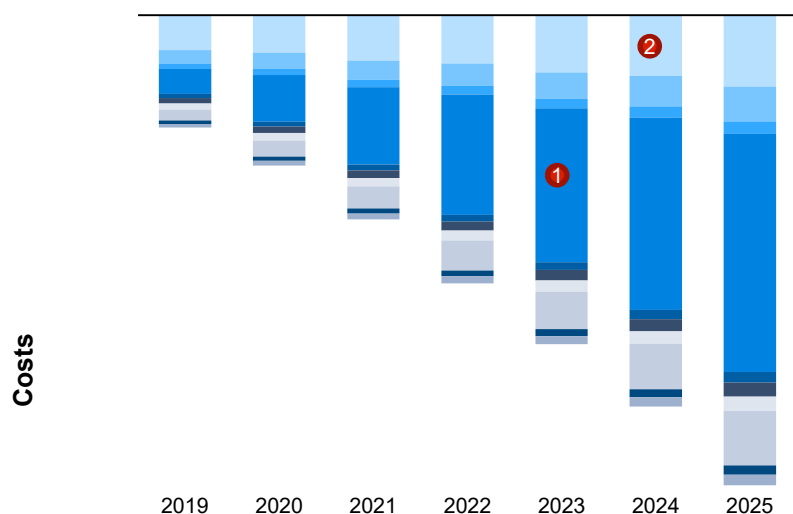
## Discussion

- The growing sourcing base results in an increase in the volumes of cherries / parchment sourced and an increase in the volume of green beans sold
- While the number of farmers in the supply chain increased about 90% the volume of green beans sold by Dorman's increased by about 350%. This is because the increase in green bean volumes comes as a result of both increasing farmer numbers and improving farm productivity. This is further broken down and analyzed later in the report
- P&L calculations show that Dorman's breaks-even on its operations in 2019. While the SDM operates purely as a cost center, the margins from the sourcing and green bean export business just about cover the costs of the SDM
- This arises from the fact that the SDM costs grow at a slower rate than the sourcing costs, processing costs and sales revenues

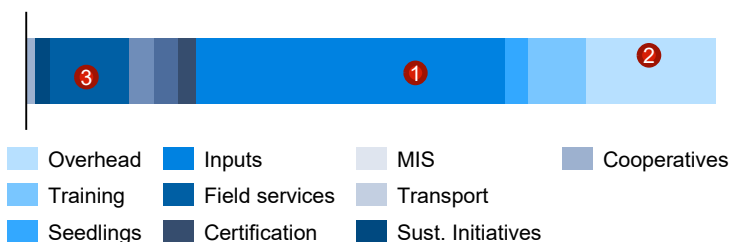


# SDM P&L: service costs and revenues

SDM costs



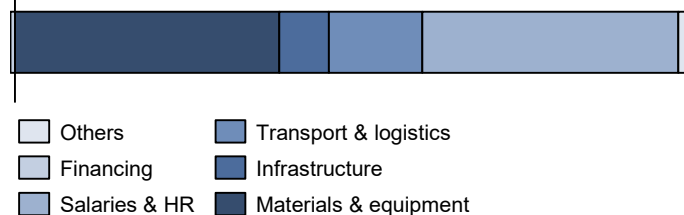
Cumulative SDM costs (USD) from 2019 to 2025



## Discussion

- 1 Inputs (fertilizers) accounts for the highest annual SDM costs starting from 2020. The cost incurred for inputs continue to increase over the period of SDM (starting from 22% of total SDM costs in 2019 to 51% of total SDM costs in 2025) due to:
  - a) increase in number of coffee trees
  - b) increase in fertilizer usage per tree
 As a result, it is also the service that the SDM operator will need to make the most cumulative investments between 2019 and 2025.
- 2 Overheads, which consists of HQ staff salaries, other administration costs and depreciation of CDL assets cumulatively account for second largest cost between 2019 and 2025. Overheads also include depreciation & amortization of CDL's warehouses and wet mills
- 3 Transportation is the third largest cumulative costs between 2019 and 2025. Transportation costs increase every year starting from 2019 to 2025 due to increasing volume of coffee cherry transported to CDL wet mills

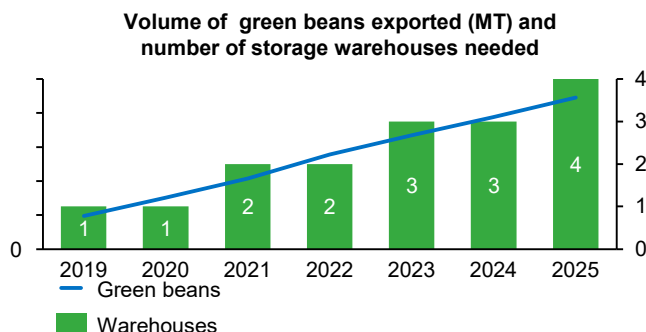
Cumulative SDM costs (USD) by cost type from 2019 to 2025



# Barriers to scaling the SDM



Warehouse capacity



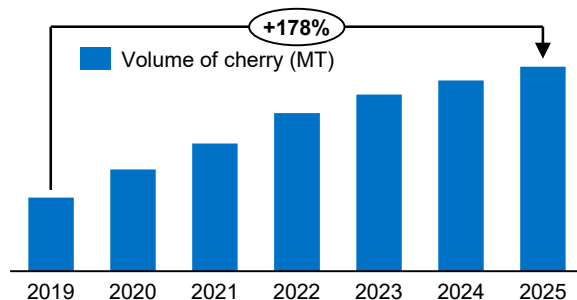
## Discussion

- CDL currently has one green bean warehouse
- This shall require expansion of existing warehouse capacity or building new warehouse to meet the increased demand



Wet mill capacity

**Volume of coffee cherry processed at each CDL operated wet mill (MT)**



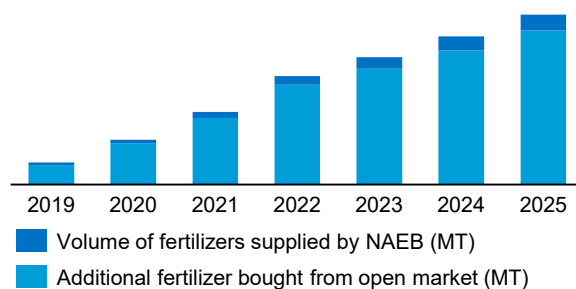
## Discussion

- The volume of coffee cherry supplied at each washing station increases by 2025, a 178% increase from 2019 (Due to increased tree density and higher productivity per tree)
- To process the increase in cherry volumes, CDL may require to increase washing station processing capacity
- Ensuring that there is availability of enough processing capacity, either through new wetmills or increased capacity of existing mills, is a scaling factor to closely monitor



Availability of fertilizers

**Volume of fertilizer required per annum (MT)**



## Discussion

- Significant increase in fertilizer requirement to by 2025 compared to in 2019
- Since the Rwandan government controls fertilizer trade, CDL may not be able to purchase required quantity of fertilizers
- Handling, storage and transport of large volume of fertilizers needs to be closely monitored by CDL management



# Conclusions: key drivers for success and key risks



## Key drivers of success

- **Dormans costs for engaging farmers in all segments are similar.** As a result, coffee from all washing stations are of comparable quality and are certified. However, Dormans revenues depend on the green bean prices which can vary by up to 20%. Hence, as Dormans increases its green beans production, it should look for more sales to high value buyers to increase its profitability margins
- **Net farmer value to Dormans increases over time.** When a farmer comes onboard the SDM, he or she provides a net value of negative US\$6 to Dormans in the first year. However, as the farmer matures in the SDM and the scale and condition of his or her farm improves, so does the value to Dormans. The same farmer is expected to contribute US\$62 by year 3 and US\$108 by year 5 to Dormans. Hence, it would be in Dormans interest to build a long-term relationship with farmers and gain value from the farmer over a period.
- **Cows can help coffee farmers reach a living income.** Projections show that coffee income alone will not move farmers up to a living income even in 10 years. The provision of cows has the potential to provide additional incomes to farmers. However, this must be implemented carefully and only farmers who have the ability (farm size, capacity) should be included in this scheme.



## Key risks

- **Farmer incomes and CDL profits have high sensitivity to number of trees per farm and yield per tree.** A small deviation from projected number of trees or yields results in a much larger drop in farmer incomes. Increasing coffee yields have also been built in to CDLs P&L projections. Not achieving the coffee yield increase has implications for both farmers and CDL and hence need to be carefully monitored.
- **Coffee prices** in global markets are **extremely volatile** subjecting CDL to price risks that can slash operating margins. Decline in market price of coffee also reduce farmer income
- **Fertilizers are the biggest cost element.** Providing fertilizer at 250gms per tree is the biggest cost to the SDM and accounts for about 33% of the cost of sourcing coffee cherry and about 50% of the total SDM costs. Even sharing small part of cost can significantly reduce costs to CDL and increase the profit margins. Hence optimizing fertilizer cost either by making farmers pay part of the cost or increasing the loyalty of farmers can help mitigate some of these risks.
- **Climate change** resulting in reduction in rainfall, poor geographic distribution of rains across coffee growing regions leads to decline in coffee yields





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# Purpose of the SDM Analysis

An outcome of SDM analyses to date was the identification of those issues which the SDM operators found of critical importance, and where they encountered limited knowledge to be available. Examples are:

## Focus learning questions

- How to improve adoption and loyalty rates
- How to use farmer profiles to tailor make service packages
- How to drive down costs (for farmers and service operators)
- How to finance a SDM (types of finance, types of farmers) and timelines
- How to create a positive enabling environment for a service delivery model

IDH will stimulate dialogue with key partners on these topics, by targeting these questions in a broader range of SDMs and by facilitating webinars and knowledge sharing events.

## IDH aims to create:

### Action driven analysis

- Analyzing a broader range of SDMs with partners that are keen to improve their SDM
- Establishment of an Innovation Program & Fund to co-design and co-fund innovative solutions within SDMs
- Develop insights packaged for financial institutions, which facilitate partnerships with service providers

### A learning community

- Deeper analyses on key levers for optimizing performance of SDMs; e.g. farmer segmentation and adoption
- Convening key partners on pre-competitive topics in SDMs through learning events, webinars and knowledge sharing
- Forming strategic partnerships with knowledge partners that share the interest in driving performance of SDMs





# With the SDM analysis, IDH envisions to identify and create actionable improvement opportunities

## Individual SDM analysis:



Analyze SDM



Identify key success drivers



Identify enabling environment challenges



Identify opportunities for innovation



Evaluate funding needs

## To facilitate further learning and improvement, IDH aims to establish:

### Global knowledge hub

- Deeper analyses on key levers for optimizing performance of SDMs; farmer segmentation and adoption
- Benchmarking data and best practice for designing and implementing smallholder business models
- Organize learning community

### Enabling environment

- Convening key partners (at sector and national level) on pre-competitive topics in SDMs
- Forming strategic partnerships with knowledge partners that share the interest in driving performance of SDMs

### Blended finance

- Establishment of an Innovation Program & Fund to co-design and co-fund innovative solutions within SDMs
- Develop insights packaged for financial institutions, which facilitate partnerships with service providers

### Technical assistance

- Innovating and improving smallholder business models of private sector players
- Using private sector lessons to inspire public sector players and vice versa

