the sustainable trade initiative

Service Delivery Model Analysis

Sucden Cocoa, Ivory Coast

Case report

July 2022

PUBLIC REPORT

Swiss Confederation
Federal Departement of Economic Affairs, Education and Research EAER
State Secretariat for Economic Affairs SECO

Ministry of Foreign Affairs

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Introduction of IDH and the SDM analysis

Importance of Service Delivery

Agriculture, including forestry, 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.

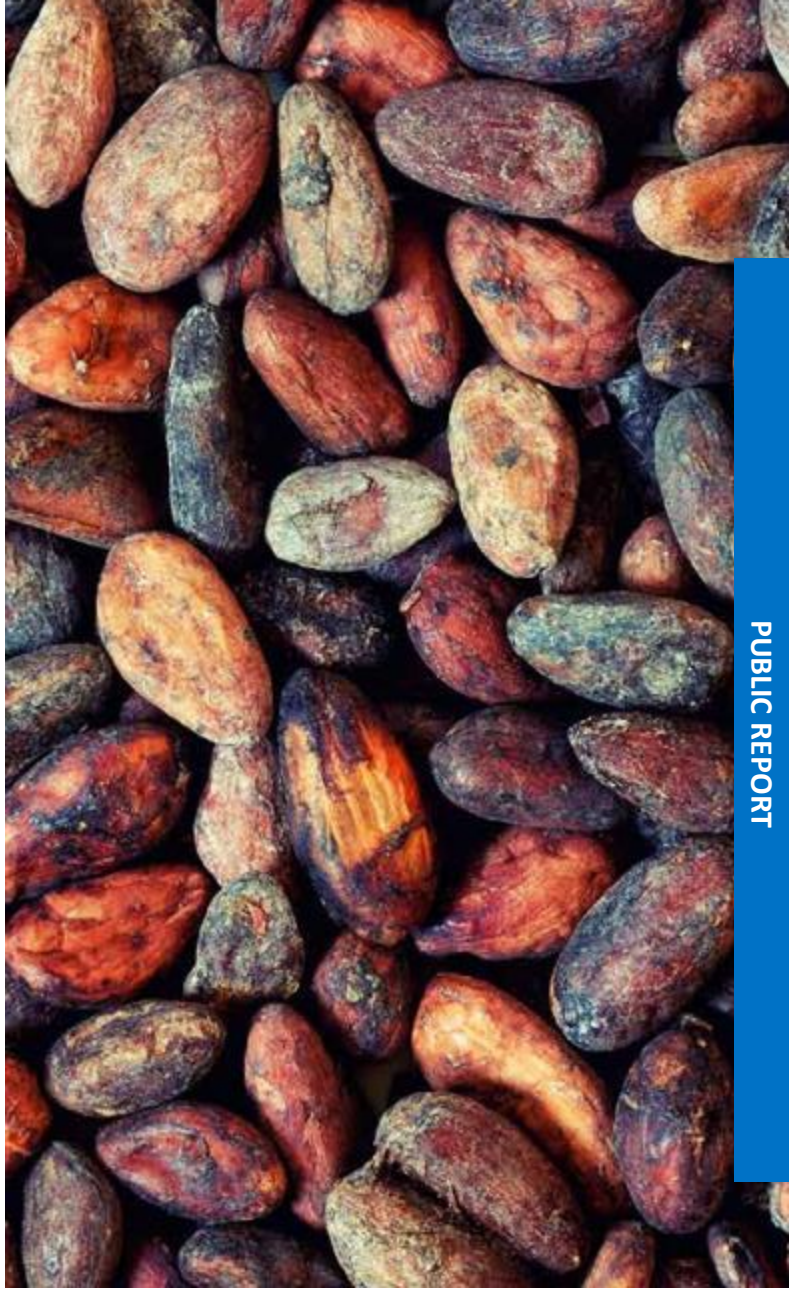
Service Delivery Models (SDMs) are supply chain structures which provide farmers with services such as training, access to inputs, finance and information. SDMs can sustainably increase the performance of farms while providing a business opportunity for the service provider. Using IDH's data-driven SDM methodology, IDH Farmfit analyzes these models to create a solid understanding of the relation between impact on the farmer and impact on the service provider's business.

Our data and insights enable businesses to formulate new strategies for operating and funding service delivery, making the model more sustainable, less dependent on external funding and more commercially viable. By further prototyping efficiency improvements in service delivery and gathering aggregate insights across sectors and geographies, IDH Farmfit aims to inform the agricultural sector and catalyze innovations and investment in service delivery that positively impact people, planet, and profit.

Farmfit Intelligence

The data collected through this SDM analysis is aggregated with other data collected through Farmfit's interventions. The aggregation of these insights enables both the benchmarking of different SDMs and the ability to better identify trends and best practices. Farmfit Intelligence's learning takes place at three different levels:

1. Business- and farm-level | Under what conditions can SDMs and coalitions/partnerships of SDMs be effective, cost-efficient, resilient and create a sustainable return on investment, at scale?
2. Enabling environment | What are the key barriers in the enabling environment that constrain the functioning of SDMs and smallholder agricultural markets?
3. Market-wide | How can SDMs and interventions improve the inclusivity, sustainability and commercial viability of smallholder agriculture markets?



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Introduction of IDH and the SDM analysis

IDH Cocoa Living Income Impact Accelerator (CLIA)

In 2018, the ICCO World Cocoa Conference Declaration stated that “the cocoa sector will not be sustainable if farmers are not able to earn a living income.” Since then, most companies and stakeholders have signed up to commitments to close living income gaps of farmers by 2030 as part of Sustainable Cocoa Initiatives in Europe, particularly the Belgium Beyond Chocolate Partnership and the Dutch Initiative on Sustainable Cocoa.

To support progress towards these commitments, living income roadmaps are being developed to provide guidance on incremental steps to motivate individual and collective action. These efforts are initially focusing on West Africa where the majority of cocoa is produced.

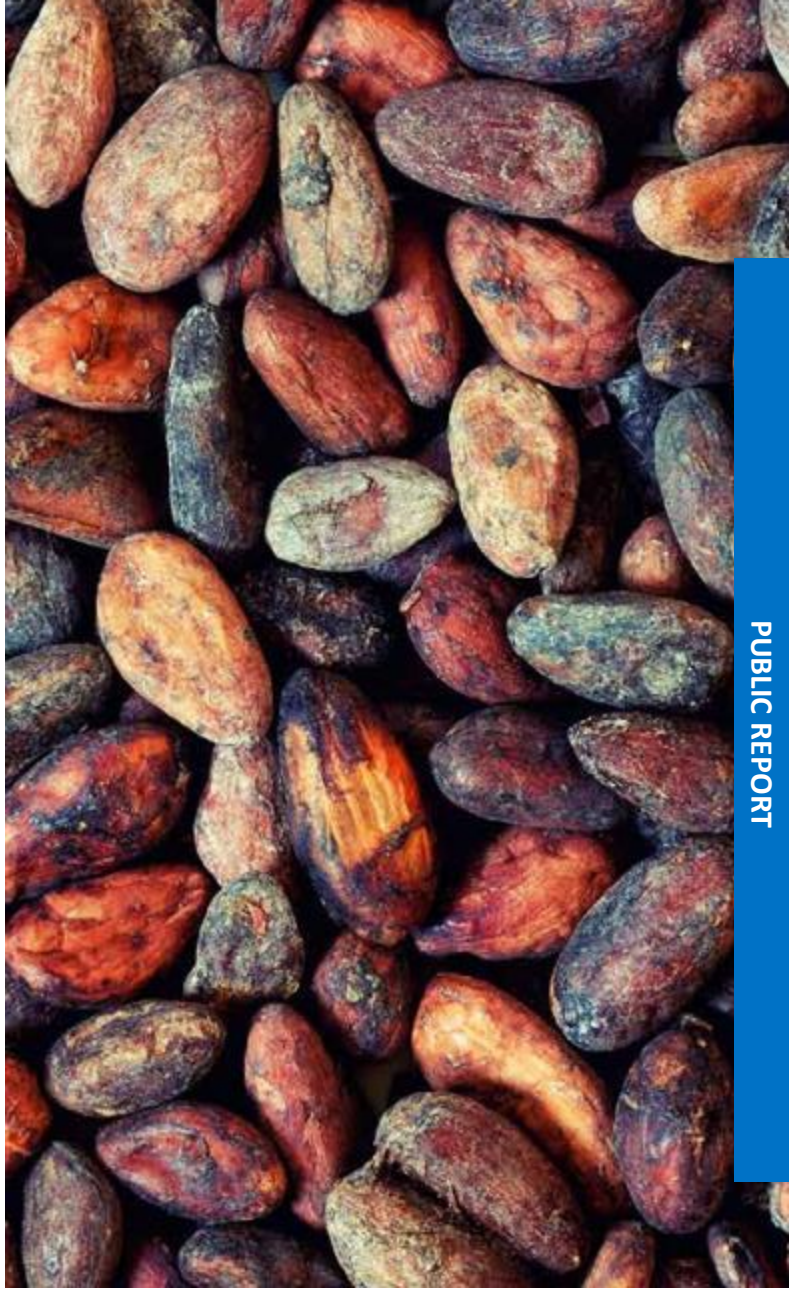
As part of its new multi-year plan (MYP) 2021-2025, IDH has committed to supporting value chain actors to transform sourcing and branding business practices with the ultimate goal of increasing and stabilising incomes of farming households. This requires simultaneous action at the level of sector governance, business practice and field impact. It also requires the development of relevant tools and approaches to guide long term and impactful collaborations on living income.

Objective: High Impact Models on Living Income in Cocoa

Based on learning from the SDM analysis and the ambitions IDH has set itself over the next 5 years, IDH will be investing in “High Impact Models” to pilot and scale business practices that aim to transform both sourcing and branding in a way that increases incomes in a way that is both stable and equitable.

Thanks

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



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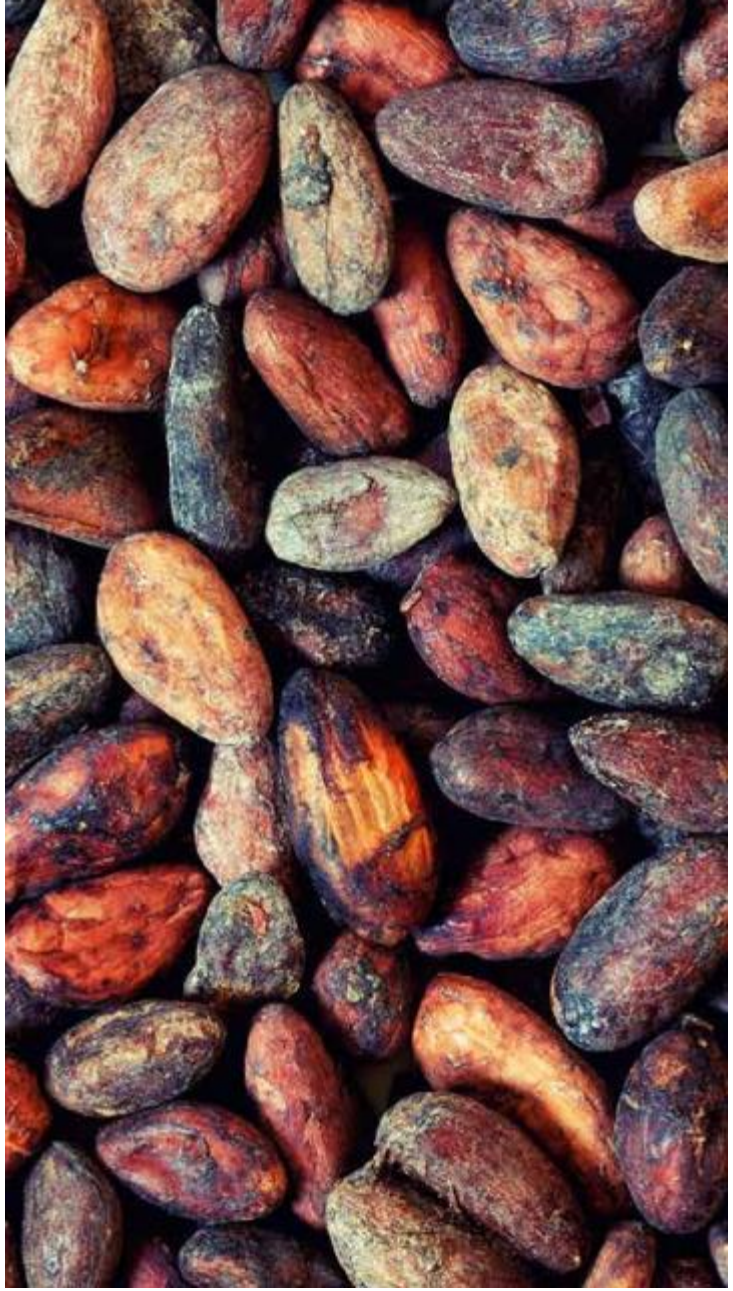
Chapter overview

Throughout the report, you can click the corresponding icons on the left of each page to be taken to the first page of that chapter

Executive Summary	▪ Situation and purpose of the analysis ▪ Main findings, recommendations and potential next steps
Recommendations	▪ Overview of recommendations ▪ Supporting arguments and analyses
Annex	▪ Context of the SDM ▪ Strategy and financial performance of SUCDEN ▪ Cooperative's business case and member satisfaction ▪ Farmer segments' business case ▪ Underlying assumptions



Executive summary

Sucden's vision to decentralize service provision is hindered by insufficient financial resilience and professionality on cooperative-level, while farmers continue to rely on services to decrease the LI-gap

BUSINESS CASE

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IMPACT CASE

+$ 496	≥500 $/year	>$ 2,300
USD/YEAR	INPUT FINANCE	INCOME GAP/YEAR

- Receiving finance for replanting, to overcome the investment and years with limited income from cocoa, a [farmer in need of replanting] can increase its [income by $496/year] compared to the Baseline. However, this increase does not close the [living income gap], and is dampened by the [repayment of received finance]
- [Productive farmers] with young and medium old trees, require finance of [more than 75% of the cost of input] to overcome months with cash constrained positions reducing the risk of [having insufficient cash for food, school fees, or healthcare]
- After receiving and implementing the [services from Sucden's SDM], farmers continue to have a [living income gap > $2,300 per year], which is only likely to be closed with higher prices or income from diversified income generating activities.

Based on the outcomes of the analysis, we have identified certain recommendations that should be prioritized by the SDM operator and other actors involved

1.

2.

3.

4.

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This SDM analysis aims covers the following Situation, Complication, and Solution

SITUATION

- As a major buyer and exporter of cocoa from Côte d'Ivoire, Sucden Cocoa has a history of working closely with farmers, their families, and farmer organizations (FOs) within the sector. Through these longstanding relationships, Sucden is fully aware of the many challenges cocoa farming families face.
- More recently, Sucden has been providing Ivorian cocoa farmers with interventions designed to assist farmers and their families to increase as well as diversify their income:
  i. teaching farmers GAP to improve productivity and income of their cocoa farm;
  ii. assisting and empowering women to start new "income generating activities" (IGAs);
  iii. encouraging farmers to diversify farm income by planting additional trees and food crops.
- Besides these interventions, Sucden has supported the certification of cocoa farming organizations and pays the LID on cocoa sourced from Côte d'Ivoire.
- Finally, Sucden continuously complies with a diverse set of sustainability requirements set by the cocoa brands it sells sustainable cocoa to while aiming to develop one Sucden Sustainability Standard.

COMPLICATION

- However, although each of these interventions can be seen as having a measurable impact on farming family income, it is increasingly apparent that the currently implemented interventions, even when undertaken in combination, are unlikely to raise the income to the level of a Living Income when considering limited farm size / cocoa productivity.
- Moreover, while cooperatives exist within the Côte d'Ivoire cocoa sector, experience shows that capacity of these groups is limited to provide training oriented towards improving income, with farmer training historically being focused primarily on the improvement of cocoa yields, and little on other elements of income improvement such as access to finance, basic family financial practices and diversification of income sources.
- Hence, to bring service provision closer to the farmer, with an intent to better tailor service provision, Sucden wants to invest in sustainable long-term solutions that enable the development of a stable farming and sourcing environment with self-sufficient actors to ultimately allow Sucden to decrease investments in the mid-term.

The core recommendations are backed up by supporting arguments

QUESTION

How can Sucden create a stable sourcing environment with self-sufficient actors that enables them to ensure supply [xxx] of sustainable cocoa while enabling SHF households to decrease the living income gap by 2025?

Farm-base level

Segment, evaluate, and manage the farmer base to inform tailored service offering that enables SHF households to decrease their living income gap, securing and increasing sustainable cocoa supply to the cooperatives Sucden sources from.

Go to Farm-base recommendations

Coop-base level

Understand and manage cooperatives' level of professionality and financial capacity to inform their capacity and needs to act as a self-sufficient actor in a decentralized SDM, securing and increasing sustainable cocoa supply to Sucden.

Go to Coop-base recommendations

SDM-base level

Invest in financial and digital capacity to secure the long-term resilience of the decentralized SDM approach, mitigating financial risks borne by farmers / coops and leveraging developed digital solutions, securing and increasing sustainable cocoa supply.

Go to The SDM recommendations

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Recommendations

← Back to Summary

Enabling SHFs to sustainable increase their HH income with a tailored service offering and graduation model, while securing and increasing sustainable cocoa supply

Recommendation 1:
Segment, evaluate, and manage the farmer base to inform tailored service offering that enables SHF households to decrease their living income gap, securing and increasing sustainable cocoa supply to the cooperatives Sucden sources from.

Pillar 1

1.A

Segment - Segment farmers by HH-size, land-size, and tree-age to create insight into current smallholder farmer household income and their gap towards their living income.

Go to recommendation

1.B

Evaluate - Reflect on impact of current service offering to inform tailored offering to SHF-households service needs which will enable them to increase their HH-income while sustainably increasing sustainable cocoa volume.

Go to recommendation

1.C

Manage - Develop a farmer graduation approach to incentivize farmers to stay loyal to the cooperative and to keep aspiration on applying GAP, securing sustainable cocoa supply to the coops Sucden sources from.

Go to recommendation

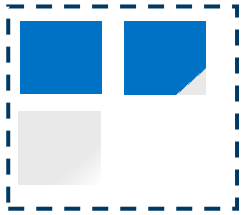
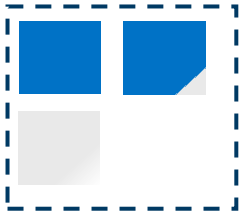
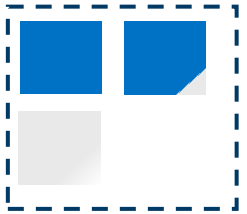
We propose a segmentation based on living income key drivers, accompanied with graduation based on farmers motivation and performance

Existing approach	Based on LI approach	Going forward in the SDM Analysis
Assets Assets are an indication of a farmer's potential resilience to shocks, ability to provide collateral for finance, and long-term business vision	**Household size** Household size is a determinant of the living-income benchmark, indicates total HH-labor capacity to perform (non) agricultural activities, and children at risk of child labor	**Segmentation** **Family size** **Land size (Cocoa / Non-cocoa)** **Average tree-age**
Competence/capacity Competence and capacity show the current extent to which a farmer is able to perform GAP and hence to pay the cost with earn revenue	**Land size (cocoa / non-cocoa)** Total farm land size indicates the cultivation assets available, and feasibility to expand cocoa cultivation activities without increasing the risk of deforestation	
Aspiration/motivation Aspiration and motivation indicate a future outlook into a farmer's willingness to adopt training, continue their farm, to repay finance received, and sustain the cocoa sales to the cooperatives	**Average tree-age** Current average cocoa tree-age indicates the long-term perspective of cultivation assets, with farmers who have aged trees facing a large long-term investment with little short-term earnings	
Determine the goals and targets for the farm, based on farming family aspirations, capacity, competence and availability of support mechanisms	*Adoption of interventions tailored to change income drivers to a feasible way in closing the living-income gap*	

Graduation

Segmentation graduation approach to open access to living-income gap decreasing interventions, based on farmers' aspiration, motivation, and loyalty to the cooperative/Sucden, see [Graduation approach]

Three farmer segments of young, medium, and old aged tree farms, with small households and land-sizes, constitute a representative sample of farmers from which data was collected

	YOUNG AGED TREES	MEDIUM AGED TREES	OLD AGED TREES
DESCRIPTION *Indication of farmer behaviour and loyalty*	• Farmers, part of the SDM, apply GAP, and apply crop protection • Start as a 1-Star farmer and have the ambition to grow over time to become a 3-Star farmer • Household consists of average 5-6 to 8-9 people (2/3 adults and 1/3 children) • LI-benchmark is 3,542 $/year	• Farmers, part of the SDM, apply GAP, and apply crop protection • Start as a 1-Star farmer and have the ambition to grow over time to become a 3-Star farmer • Household consists of average 5-6 to 8-9 people (2/3 adults and 1/3 children) • LI-benchmark is 3,542 $/year	• Farmers, part of the SDM, initiate Staggered replanting strategy, apply GAP, and apply crop protection • Start as a 1-Star farmer and have the ambition to grow over time to become a 3-Star farmer • Household consists of average 5-6 to 8-9 people (2/3 adults and 1/3 children) • LI-benchmark is 3,542 $/year
LAND-SIZE *Available land-size and crops cultivated*	 **Total**: 2.7 ha **Cocoa**: 1.8 ha **Other crops:** 0.9 ha * Banana, Cassava, Coffee, Maize, and Rubber	 **Total**: 2.7 ha **Cocoa**: 1.8 ha **Other crops:** 0.9 ha * Banana, Cassava, Coffee, Maize, and Rubber	 **Total**: 2.7 ha **Cocoa**: 1.8 ha **Other crops:** 0.9 ha * Banana, Cassava, Coffee, Maize, and Rubber
TREES *Tree conditions on the farm*	• **Age:** 8 years • **Density:** 1,100 trees/ha	• **Age:** 17 years • **Density:** 1,100 trees/ha	• **Age:** 32 years • **Density:** 1,100 trees/ha
BASELINE *Indication of farmer behaviour and loyalty*	• Have the same characteristics as the SDM farmer, but don't perform GAP and are not able to utilize any services from the SDM.	• Have the same characteristics as the SDM farmer, but don't perform GAP and are not able to utilize any services from the SDM.	• Have the same characteristics as the SDM farmer, but don't perform replanting, nor GAP, and are not able to utilize any services from the SDM.
REPRESENT *% representing total of farmer base per 21/22*	37%	25%	7%

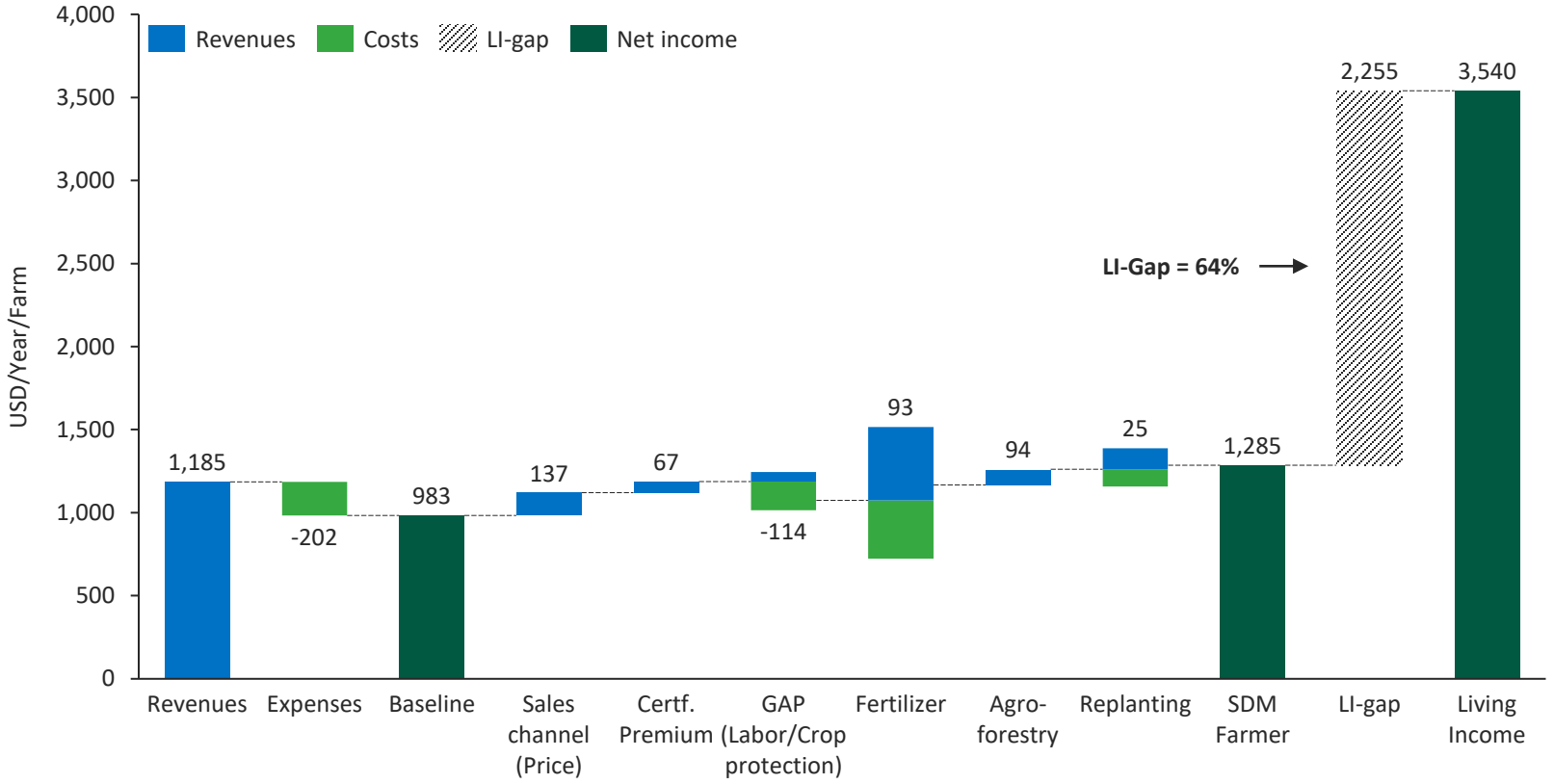
Sucden's farmer base is represented for 70% with these segments. The remaining 30% is cultivating on larger land-sizes, with different tree-age averages, and households sizes, see [Farmer Distribution]

Farmers with young cocoa tree farms are unable to close the living income gap with the impact on HH-income of current and future service provision dampening as prices of high-quality inputs are increasing

YOUNG AGED TREES

Baseline, SDM Farmer, and Living income comparison

10-year average annual HH-income USD/year



REFLECTIONS

- Farmers within the SDM are able to increase their income from cocoa by 33% as a result of GAP, the application of high-quality inputs, better prices, and (re)planting of shade and cocoa trees
- The increase of USD 93 from fertilizer is less compared to previous studies on the cocoa industry due to fertilizer having increased in price considerable
- The living income gap decreases from 2,559 $/year to 2,225 $/year (-12%), showing a big remaining gap to close for both the Baseline and SDM farmers
- The impact of a feasible change in the living income drivers is to be seen [here], and the 10-year annual P&L [here].

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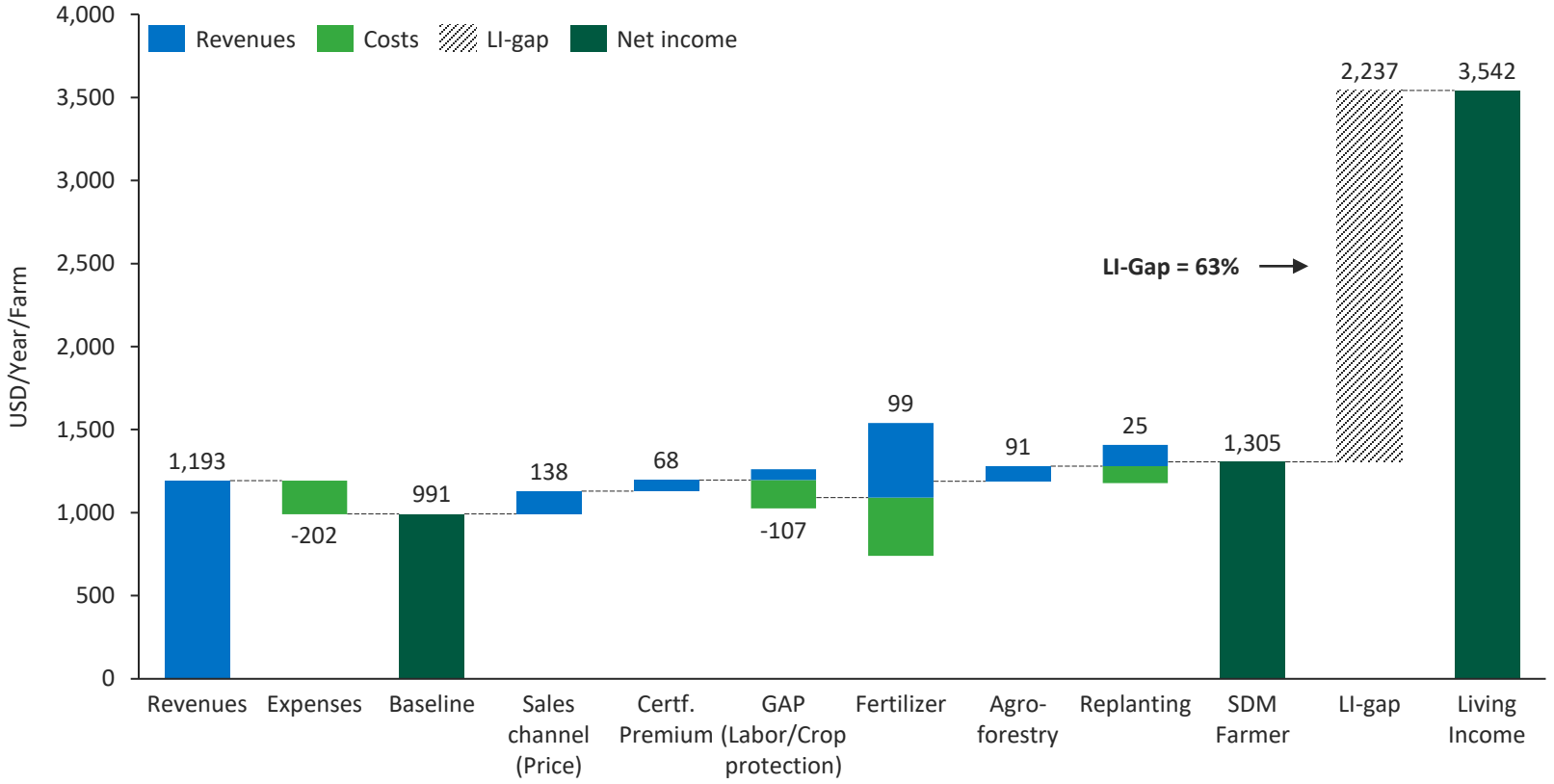
Farmers with medium-aged cocoa tree farms are unable to close the living income gap while having slightly more production compared to young aged cocoa tree farms, showing the need for other LI-interventions

MEDIUM AGED TREES

Baseline, SDM Farmer, and Living income comparison

10-year average annual HH-income USD/year



REFLECTIONS

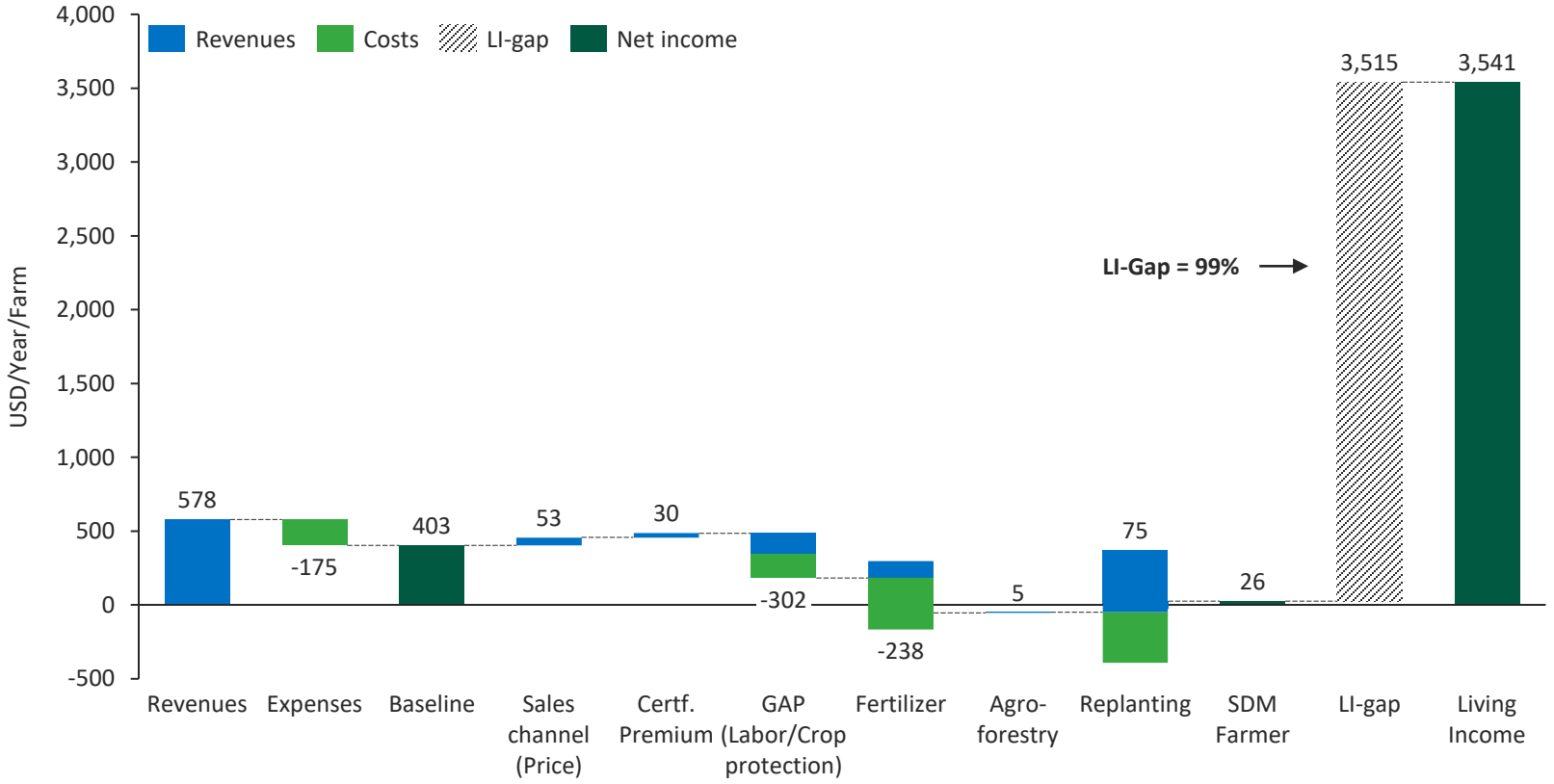
- Farmers within the SDM are able to increase their income from cocoa by 34% as a result of GAP, the application of high-quality inputs, better prices, and (re)planting of shade and cocoa trees
- The increase of USD 99 from fertilizer is less compared to previous studies on the cocoa industry due to fertilizer having increased in price considerable
- The living income gap decreases from 2,551 $/year to 2,237 $/year (-12%), showing a big remaining gap to close for both the Baseline and SDM farmers
- The impact of a feasible change in the living income drivers is to be seen [here], and the 10-year annual P&L [here].

Farmers who perform replanting, to replace aged trees and solve declining yield, require additional income from diversification activities in the maturing stage of cocoa trees (first 4-years)

OLD AGED TREES

Baseline, SDM Farmer, and Living income comparison

10-year average annual HH-income USD/year



REFLECTIONS

- Farmers in need of replanting, who follow a 20% annual replanting strategy, are unable to regain their HH income in 10-years, compared to Baseline farmers who do not replant.
- Diversifying with matoke, maize, or other intercropping possibilities, could be an option to increase income during the first years of replanting the farm as cocoa trees become productive are 4-years
- The living income gap increases from 3,139 $/year to 3,515 $/year (+12%), showing a big remaining gap to close for both the Baseline and SDM farmers
- The impact of a feasible change in the living income drivers is to be seen [here], and the 10-year annual P&L [here].

With the cocoa industry trying to reduce the impact on deforestation and the usage of subsidized inputs, while reaching feasible productivity, the focus should be on increasing prices and diversifying income

Feasibility: Unlikely — Likely

	YOUNG AGED TREES [1]	MEDIUM AGED TREES [1]	OLD AGED TREES [1]
Production area *Current cocoa land-size and required change*	**1.8 Ha > 5.7 Ha** *+ 3.9 Ha (+215%)*	**1.8 Ha > 5.7 Ha** *+ 3.9 Ha (+215%)*	**1.8 Ha** *See Note 3*
Productivity *Current productivity per Ha and required change*	**720 > 1,567 kg/Ha** *+ 847 kg/Ha (+117%)*	**728 > 1,568 kg/Ha** *+ 840 kg/Ha (+115%)*	**728 kg/Ha** *See Note 3*
Price *Current price incl. Premium and required change*	**1.48 > 3.17 $/kg** *+ 1.74 $/kg (+117%)*	**1.48 > 3.13 $/kg** *+ 1.71$/kg (+115%)*	**1.48 $/kg** *See Note 3*
Cost of Production *Current cost of production per Ha and required change*	**460 > 0 $/Ha** *-/- 460 $/Ha (-100%)*	**460 > 0 $/Ha** *-/- 460 $/Ha (-100%)*	**572 $/Ha** *See Note 3*
Diversified income *Current non-cocoa income and required change*	**194 > 2,449 $/year** *+ 2,255 $/year (+1,162%)*	**194 > 2,430 $/year** *+ 2,37 $/year (+1,152%)*	**194 $/year** *+ 3,412 $/year (+1,758%)*

Required and feasible change to close living income gap:

- Mitigating risk of deforestation, the farmer is possibly able to replant 0.9 ha of land currently used for other crops, putting more pressure on cash earnings as HH consumed food crops are replaced by cash crops, and requiring more labor which reduces off-farm labor income.
- Farmers in the SDM apply GAP, apply fertilizer/crop-protection, and have positive impact from agroforestry, resulting in a feasible yield of 730 kg/ha. Hence, no further productivity improvements are to be reached.
- The price is fixed by the CCC on 1.43 $/kg for 21/22, with Sucden paying a premium of 0.05 $/kg, but the increase to 3.2 $/kg even by-passes the living income Reference Price set by Fairtrade (2.20 $/kg) and Oxfam (2.67 $/kg). [2]
- The CCC has tried to control overproduction by limiting access to planting material and inputs, so farmers in the SDM don't have access to subsidized inputs and cooperatives are financially unable to provide subsidies [see analysis]. Hence, no change possible in cost of production.
- Farmers diversify with mono-crop strategies, earning approx. 156 $/ha/year. Farmer could follow an inter-cropping strategy to cultivate e.g. banana between cocoa trees, but further research should be done to see whether net income from intercropping outweighs loss of off-farm labor income, and can be linked to current market demand

NOTE: 1) Required change is calculated based on the performance of a fully mature cocoa tree farm that is cultivated in accordance with the practices of the young, medium, and old-aged trees farms, with one variable changing and the other unchanged. 2) Voice Network (2019); 3: Has young/medium requirements when replanted trees are matured

A clear phase-wise graduation road map for farmers, which is linked to expected outcomes from previous phases, helps farmers to stay loyal to the cooperative and to keep aspiration on applying GAP

Gradual and outcome-based investments to ensure farmer loyalty and implementation of GAP

ENTRY

Criteria to join the SDM

- Farmer is willing to supply ≥ 95% of their cocoa to the cooperative
- Farmer shows medium/high risk appetite, is willing to invest in its farm, and aspirates to graduate from one star to the following;
- Farmers' cultivation area distance to protected forest areas and other HCV areas in line with requirement;
- Farmer is member of Sucden managed coop.

Move to 2-Star farmer

- Net positive cashflow cocoa activities
- Supply calculated sourcing target
- Timely loan payments
- Survival of ≥ 95% of shade trees
- Attend FFS training and school (children)

ALL SEGMENTS

★ ☆ ☆ **1-Star farmer**

- Access to training on FFS
- Input finance on 25% of input cost
- Receive shade-tree seedlings for low-density agroforestry strategy
- Premium on certified cocoa volume
- School fee loan per child

Move to 3-Star farmer

- Requirements 1-Star farmer, and
- Show adoption of coaching recommendations
- Survival of ≥ 95% of shade trees
- If applicable to average tree-age, replant 20% annually of cocoa trees

ALL SEGMENTS

★ ★ ☆ **2-Star farmer**

- Services of 1-Star farmer, and
- One-on-one coaching
- Input finance on 50% of input cost
- Receive shade-tree seedlings for medium-density agroforestry strategy

OLD

- Access to replanting finance of 75% of seedling cost

Prolong 3-Star farmer status

- Requirements for 2-Star farmer, and
- Attendance women focusses training by women of the household

ALL SEGMENTS

★ ★ ★ **3-Star farmer**

- Services of 2-Star farmer, and
- Join land-certificate/tenure group
- Input finance on 75% of input cost
- Access to training on gender awareness, income generating activities, finance, and nutrition
- Access to join a VSLA

OLD

- Access to replanting finance of 75% of seedling cost

Distribution of farmer base into the different 'Star' – rankings based on current service provision by Sucden and the average number of years farmers are already members of cooperatives.

The distribution is an assumption and used to model the cost of service provision in this SDM Analysis, see [SDM Assumptions]

PER 2021/22	15%	80%	5%

Decentralize the SDM to empower cooperatives to the extent it is financially feasible and professionally manageable by the cooperatives, securing and increasing sustainable cocoa supply

Recommendation 2:
Understand and manage cooperatives' level of professionality and financial capacity to inform their capacity and needs to act as a self-sufficient actor in a decentralized SDM, securing and increasing sustainable cocoa supply to Sucden.

Pillar 2

2.A

Professionality - Assess coops' non-financial capacity based on eight drivers of professionality to create insight into the internal capacity to operate as a self sufficient actor.

Go to recommendation

2.B

Financial capacity - Assess coops' financial capacity and resilience based on their unique farmer base needs and performance to create insight into a coop's financial outlook and to inform tailored decentralization of service to be provided by matured coops managed by Sucden.

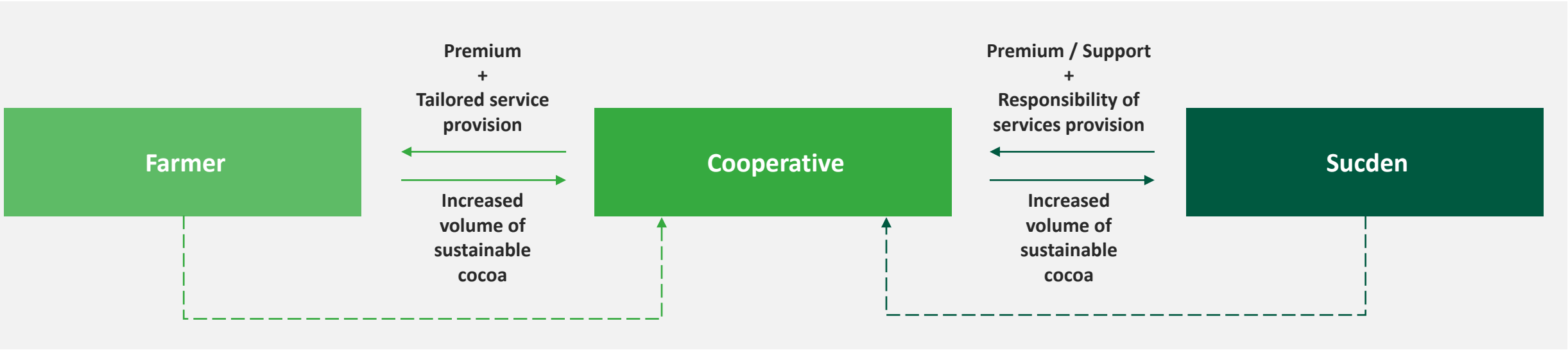
Go to recommendation

2.C

Management - Develop a coop development and graduation approach to incentivise coops to stay loyal to Sucden and to keep coops aspired to build their (non-) financial capacity, while securing and increasing sustainable cocoa supply to Sucden.

Go to recommendation

Understand and manage cooperatives' level of professionality and financial capacity to inform their capacity and needs to act as a self-sufficient actor in a decentralized SDM



2.B	Evaluate farmers' satisfaction with cooperative service offering and additional service needs	Evaluate farmer base and related performance	2.B

- Service provision from the cooperative to the farmers should be tailored to the needs of its unique farmer base.

2.B	Assess coops' financial performance as a result of the decentralization approach	Evaluate coops' level of professionality showing their maturity and capacity	2.A

- The aim is to decentralize service provision so that it becomes more tailored, as a result of a better understanding and contact with the farmer. This should be done to the extent to which is financially feasible for cooperatives to operate.

Cooperatives' level of professionality should be measured based on eight dimension: operations, financial & internal management, sustainability, farmer base, external risk, enabling environment, and market

- Direct sphere of influence
- Indirect sphere of influence

EXTERNAL RISKS
Assess the agribusiness's awareness of various types of risks, including biological, climate, social, and political-related. It also assesses the agribusiness's capacity to mitigate these risks.

FARMER BASE
Assess how the management of the farmer base ensures timely and sufficient delivery of quality produce to the agribusiness.

OPERATIONS
Assess the processes that the agribusiness has, all the way from collecting the produce to delivering it to clients. This also includes quality control and any processing necessary to turn the raw materials into the desired product.

INTERNAL MANAGEMENT
Assess how the agribusiness makes and implements the decisions necessary to operate. This also includes any aspects of organizing and operating a farm for maximum production and profit.

FINANCIAL MANAGEMENT
Assess how the agribusiness plans, directs, monitors, and controls its financial resources.

SUSTAIN - ABILITY
Assess how the agribusiness manages and conserves its natural resource base. This also includes the use of new technologies to ensure the agribusiness's needs will continue to be met in the future.

MARKET
Assess how well the agribusiness understands its market. This also includes its ability to access it, anticipate risks, and be competitive.

ENABLING ENVIRONMENT
Assess how efficiently the agribusiness connects with available services. This includes services offered by capacity builders, NGOs, and governments. It also assesses the agribusiness's awareness of local laws, and the quality and type of relationships it has to the community.

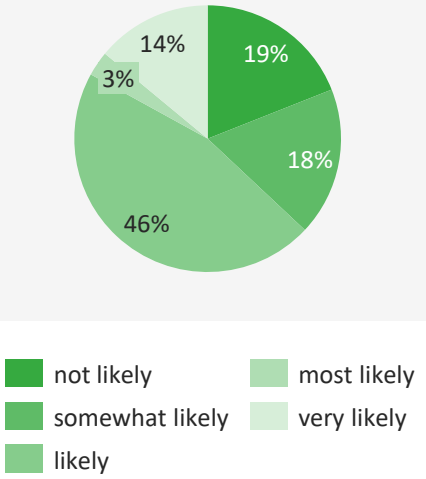
Source: SCOPEinsight (2022)

Recommendations | Recommendation 2.B: Assess cooperatives' financial capacity and resilience

Farmers are likely to recommend Sucden's cooperatives to other peers, but improvements can be made in the management of the cooperative's relationship with farmers and in the completeness of services offered

Recommendation from farmers

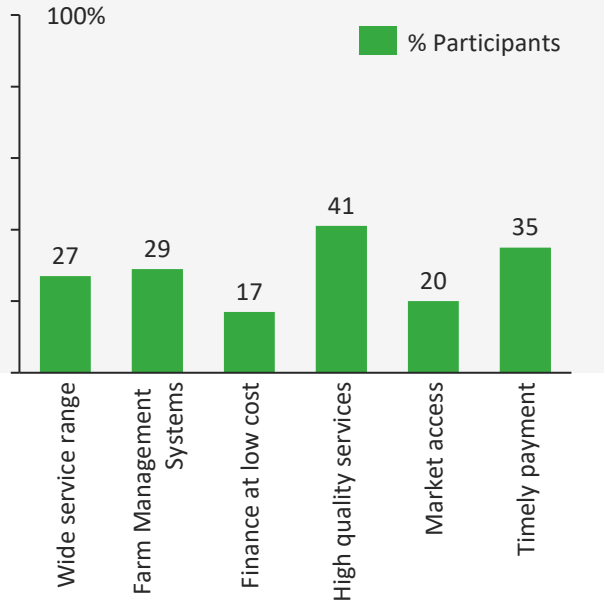
How likely is it that you would recommend the coop to a friend/peer?



- In general, farmers are likely to recommend the coop they work with to other farmers in the community

Reason for positive feedback

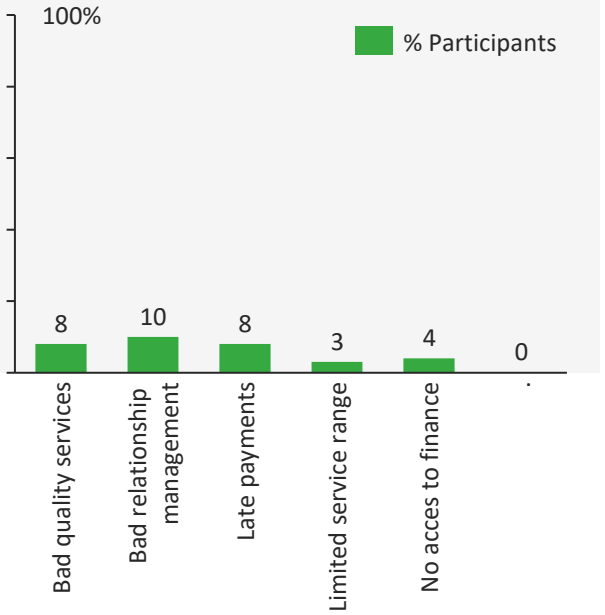
Why would you recommend using the services of the cooperative?



- Farmer are most sensitive for high quality services and timely payment as incentive to recommending their coop

Reason for negative feedback

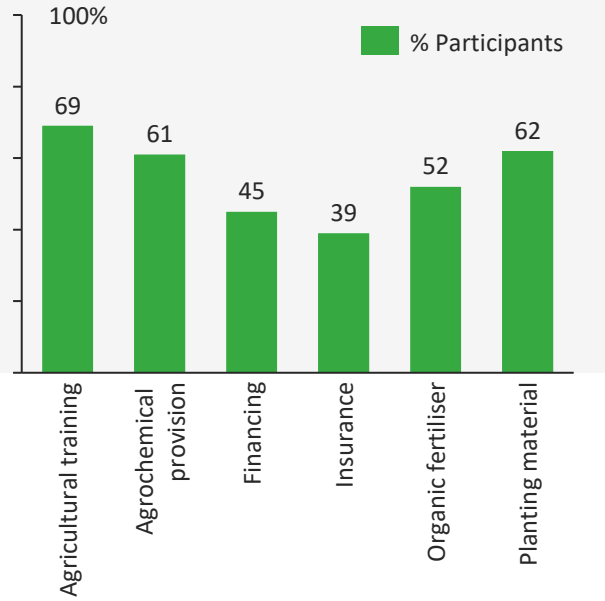
Why would you not recommend using the services of the cooperative?



- Coops should improve the management of their relationships, which is currently run through delegates and CLRM Agents they work with, to ensure long-term relations and the ability to expand their farmer base

Service needs [1)]

What services would you like to receive from the cooperative in the future?



- With coops only able to function as input facilitator, service offering should be broadened with training, seedlings, insurance, and finance to purchase inputs

NOTE: 1) Participants are able to provide multiple answers. % participants of each services in an indication of how many of the surveyed selected that service.

Sucden aims to decentralize the provision in a phased approach, making the cooperative fully responsible for service provision in five years, if financially feasible for the cooperative

Annual development of service decentralization		21/22	22/23	23/24	24/25	25/26
Coop Capacity	• Coop training on certification, financial literacy • CLRMS payrolling	100% / 0%	90% / 10%	62% / 38%	33% / 67%	0% / 100%
Farmer Capacity	• FFS, Coaching and Farm Development Plans • Input/Replanting finance	100% / 0%	90% / 10%	62% / 38%	33% / 67%	0% / 100%
Deforestation	• Shade-tree provision in low, medium, and high density • Land-tenure accessibility	100% / 0%	90% / 10%	62% / 38%	33% / 67%	0% / 100%
Traceability	• Digital payment of premiums • Farm mapping	100% / 0%	90% / 10%	62% / 38%	33% / 67%	0% / 100%
Child/Forced labor and women empowerment	• Gender awareness, finance and nutrition training • Remediation kits • VLSA development	100% / 0%	90% / 10%	62% / 38%	33% / 67%	0% / 100%

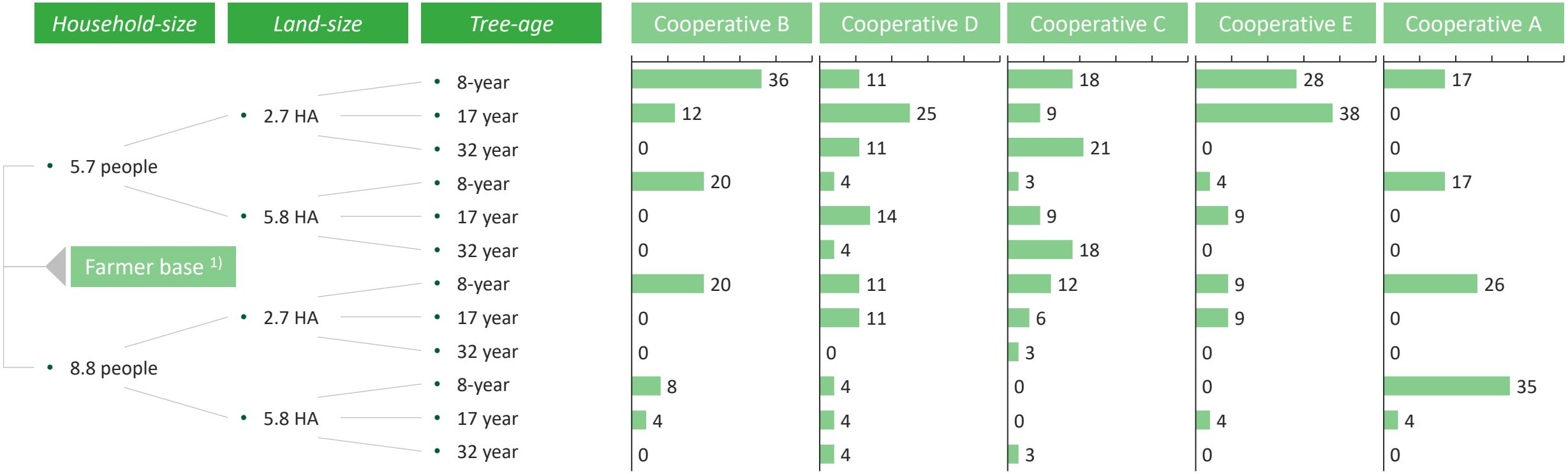
Paid/Managed by Sucden (and partners)

Paid/Managed by Cooperative

Swiss Confederation Federal Departement of Economic Affairs, Education and Research EAER State Secretariat for Economic Affairs SECO | Ministry of Foreign Affairs | DANIDA

S&D SUCDEN COCOA | idh the sustainable trade initiative

Cooperatives Sucden sources from and collaborates with are to be segmented into three segments based on the characteristics of their farmer base with household-size, land-size, and tree-age



- The above farmer distribution analysis shows **three different segments of cooperatives**, Sucden currently operates with and sources from:

Smallholder Coop

- **Cooperative B, D and E**
- Predominantly productive farmers with small households, average tree-age between 8-17 years, and land-size 2.7 ha

Prospective Coop

- **Cooperative A**
- Predominantly productive farmers with small/medium households, average tree-age of 8 years, and land-size 5.8 ha

Replant Coop

- **Cooperative C**
- Predominantly farmers in need of replanting with small households, average tree-age of 32 years, and land-size 2.7 - 5.8 ha

NOTE: 1) Farmer base distribution is established from Primary Data Collecting data collected by Akvo (2022), n: 157

← Back to Coop segments
Go to Coop financials →
Go to SDM financials →
Go to Coop Assumptions →

The analysis on self sufficiency per cooperative are run on three coop segments, each having its own distinct characteristics on farmer-base, head-count, and fleet

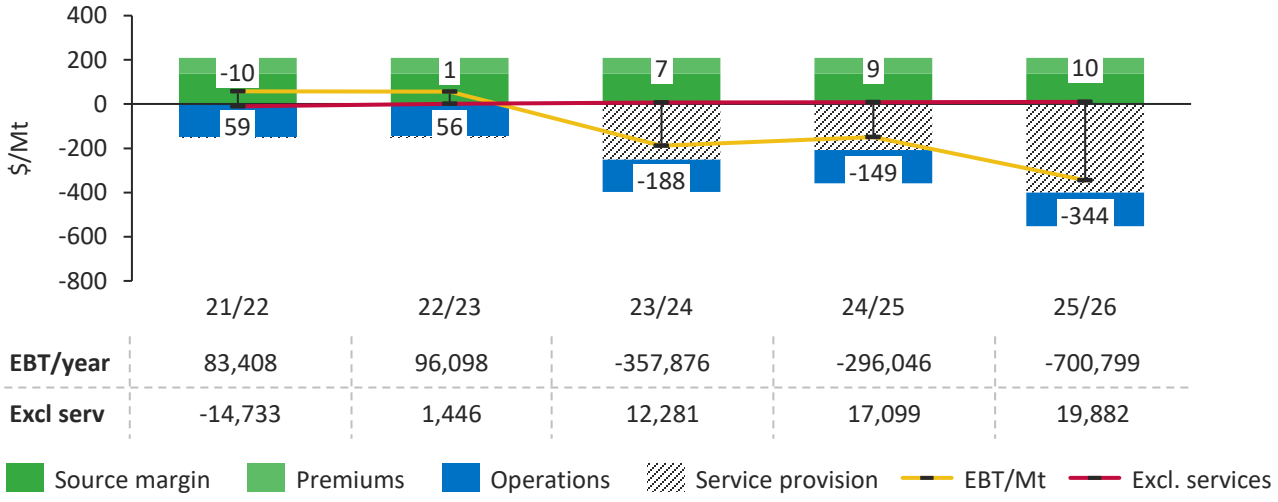
	SMALLHOLDER COOP	PROSPECTIVE COOP	REPLANTING COOP
DESCRIPTION *Indication of coops' behaviour and capacity*	• The cooperatives are part of the fixed pool of sourcing partners; • Part of their ambition is to become a 'mature' cooperative to the extent financially feasible;	• The cooperatives' farmers are UTZ/RA certified and have the ambition to grow towards 3-Star farmers	
FARMER-BASE *Number of members, growth and attrition rate*	# Farmer (per 21/22): **1,000** Annual growth: **3%** Annual attrition: **5%** **Farmer base profile, see [link]**	# Farmer (per 21/22): **1,000** Annual growth: **3%** Annual attrition: **5%** **Farmer base profile, see [link]**	# Farmer (per 21/22): **1,000** Annual growth: **3%** Annual attrition: **5%** **Farmer base profile, see [link]**
HEAD-COUNT *# Personnel hired / paid by the coop*	• **Salary based:** • Director • General secretary • Project managers (Agro, CLRMS, Procurement) • Data collectors		• **Fee based:** • Delegates
FLEET *# of fleet owned and operating by the coop*	• **Trailor**: 35 Mt/drive (3 per week) • **Motor:** one per delegate, who pay for maintenance and fuel themselves • **Weighing scales:** one per coop	**FINANCE PROVISION** *Assumptions on the provision of input, school, and replanting finance*	• **Input:** Interest 0%, default 10%, duration 6 months • **School:** interest 0%, default 0%, duration 6 months • **Replanting**: interest 0%, default 10%, 5 years (+ 3 year grace period)

Operating a growing smallholder farmer base that unlocks access to more expensive services over time, smallholder cooperatives can bear approximately 3% of service provision cost

Smallholder Coop *(Partly based on cooperative B)*

Earning Before Tax (EBT) per Metric Ton cocoa sold to Sucden

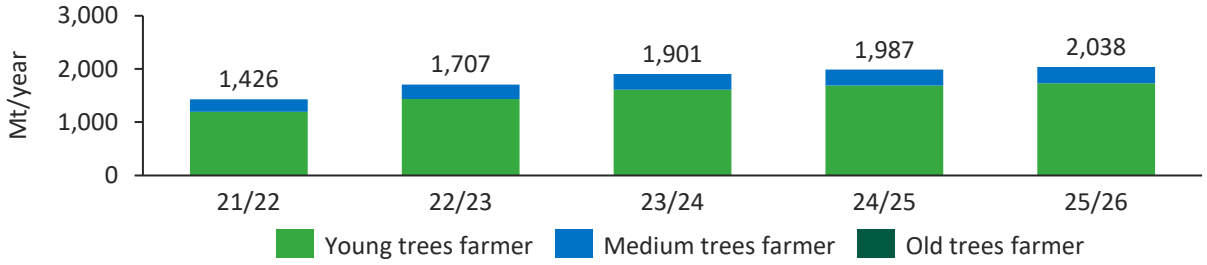
5-year P&L in $/Mt [1)]



	21/22	22/23	23/24	24/25	25/26
EBT/year	83,408	96,098	-357,876	-296,046	-700,799
Excl serv	-14,733	1,446	12,281	17,099	19,882

Souring volume development over time (5-years)

Annual sourcing volume (Mt) per segment



Reflections – Sourcing margin

- The margin/Mt turns negative in 23/24 as 38% [see decentralization overview] of service provision costs are allocated to the cooperatives and due to a large group of farmers maturing from star 2 to 3, showing the need for additional financial support or increase productivity per farmer
- Although sourcing volume increases, with pressure increasing on the transportation capacity, and potentially the need for additional hired transport, the transporting cost does not increase, suggesting transportation capacity [2)] is sufficient as long as planned adequately
- Excluding premiums, finance cost, and service costs, the smallholder coop is able to earn just enough to break-even with on average USD 7k per year, allowing the coverage of 3% service cost

Reflections - Sourcing volume

- Total sourcing volume is projected to increase from 1,426 Mt to 1,731 Mt (+ 43%) mainly driven by an increase in the number of farmers and productivity per farmer
- With the farmer base predominantly existing of smallholders with relatively young trees, the relative sourcing volume from this segment increases from 84% to 85% in 25/26

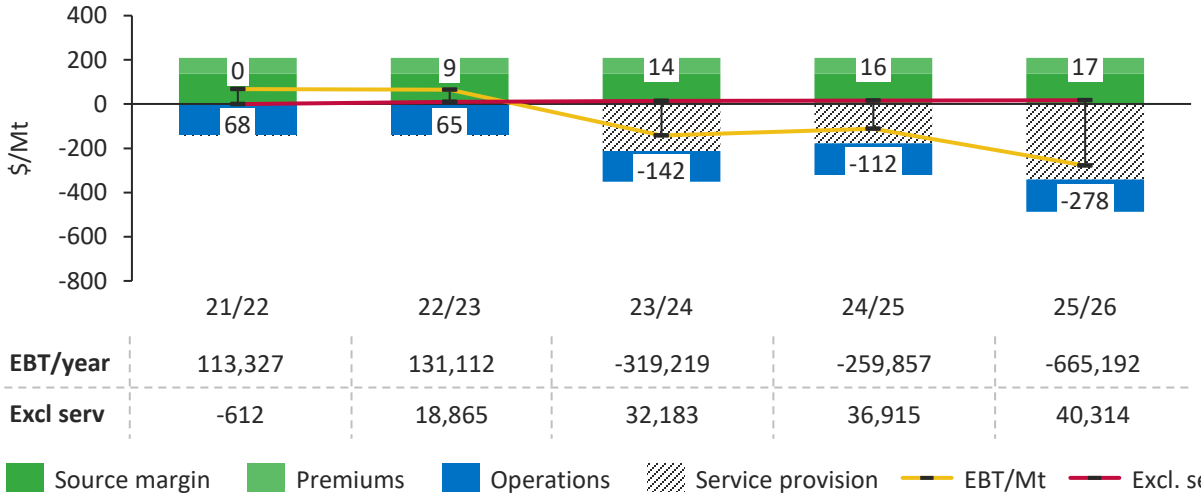
NOTE: 1) Sales margin is calculated as the difference between the price paid by Sucden (excl. Sustainability and Transportation premium) and the price paid to the Farmer (excl. Sustainability premium) per Mt.
2) Transportation capacity, utilization, and cost are modelled on a monthly base and do not reflect possible storage shortage and/or transportation capacity shortage on a weekly base during the peak months of November/December

Operating a growing prospective farmer base that unlocks access to more expensive services over time, prospective cooperatives can bear approximately 8% of service provision cost

Prospective Coop *(Partly based on cooperative A)*

Earning before Tax (EBT) per Metric Ton cocoa sold to Sucden

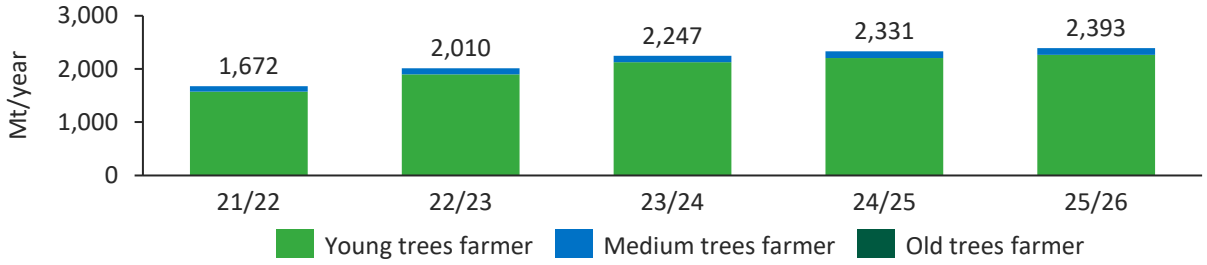
5-year P&L in $/Mt [1)]



	21/22	22/23	23/24	24/25	25/26
EBT/year	113,327	131,112	-319,219	-259,857	-665,192
Excl serv	-612	18,865	32,183	36,915	40,314

Souring volume development over time (5-years)

Annual sourcing volume (Mt) per segment



Reflections – Sourcing margin

- The margin/Mt turns negative in 23/24 as 38% [see decentralization overview] of service provision costs are allocated to the cooperatives and due to a large group of farmers maturing from star 2 to 3, showing the need for additional financial support or increase productivity per farmer
- Although sourcing volume increases, with pressure increasing on the transportation capacity, and potentially the need for additional hired transport, the transporting cost does not increase, suggesting transportation capacity [2)] is sufficient as long as planned adequately
- Excluding premiums, finance cost, and service costs, the smallholder coop is able to earn just enough to break-even with on average USD 26k per year, allowing the coverage of 8% service cost

Reflections - Sourcing volume

- Total sourcing volume is projected to increase from 1,672 Mt to 2,393 Mt (+ 43%) mainly driven by an increase in number of farmers and increase in volume per farmer, due to service adoption.
- With the farmer base predominantly existing of smallholders with relatively young trees, and larger land-sizes, the relative sourcing volume from this segment increases from 94% to 95%

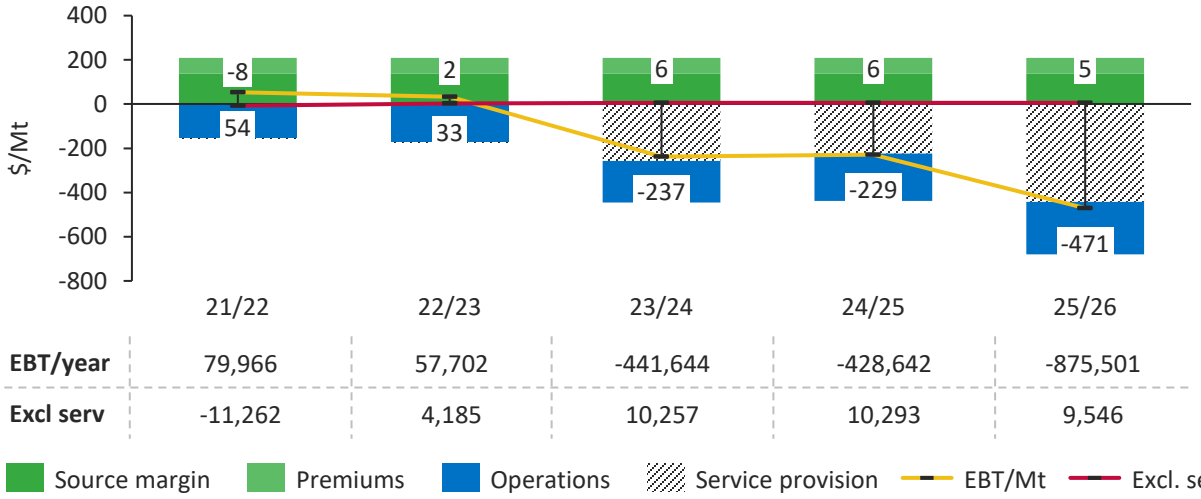
NOTE: 1) Sales margin is calculated as the difference between the price paid by Sucden (excl. Sustainability and Transportation premium) and the price paid to the Farmer (excl. Sustainability premium) per Mt.
2) Transportation capacity, utilization, and cost are modelled on a monthly base and do not reflect possible storage shortage and/or transportation capacity shortage on a weekly base during the peak months of November/December

Operating a growing replanting farmer base that unlocks access to more expensive services over time, replant cooperatives can bear approximately 10% of service provision cost

Replant Coop *(Partly based on cooperative C)*

Earning before Tax (EBT) per Metric Ton cocoa sold to Sucden

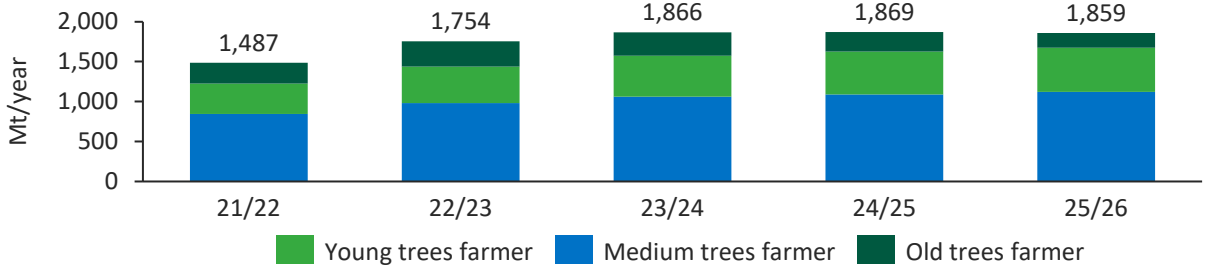
5-year P&L in $/Mt [1)]



	21/22	22/23	23/24	24/25	25/26
EBT/year	79,966	57,702	-441,644	-428,642	-875,501
Excl serv	-11,262	4,185	10,257	10,293	9,546

Souring volume development over time (5-years)

Annual sourcing volume (Mt) per segment



Reflections – Sourcing margin

- From 22/23 the margin per Mt sold to Sucden becomes negative as a result of more than feasible decentralization of service provision
- Although sourcing volume increases, with pressure increasing on the transportation capacity, and potentially the need for additional hired transport, the transporting cost does not increase, suggesting transportation capacity [2)] is sufficient as long as planned adequately
- With approximately 45% of the farmer base existing of old aged tree farms, there is a large demand for the replanting loan, leading to increased Finance cost, see [here] for finance facility developments.
- Excluding premiums, finance cost, and service costs, the smallholder coop is able to earn just enough to break-even with on average USD 5k per year, allowing the coverage of 2% service cost

Reflections - Sourcing volume

- Total sourcing volume is projected to increase from 1,496 Mt to 1,859 Mt (+ 43%) mainly driven by an increase in number of farmers and increase in volume per farmer, due to service adoption
- Although the volume and portion sourced from medium aged-trees farms increases over time, the decrease in sourcing volume from old trees farms, who replant their farm, puts pressure on the volume of cocoa available to cover service provision cost with

NOTE: 1) Sales margin is calculated as the difference between the price paid by Sucden (excl. Sustainability and Transportation premium) and the price paid to the Farmer (excl. Sustainability premium) per Mt.
2) Transportation capacity, utilization, and cost are modelled on a monthly base and do not reflect possible storage shortage and/or transportation capacity shortage on a weekly base during the peak months of November/December

Recommendations | Recommendation 2.B: Assess cooperatives' financial capacity and resilience

This information is only available in the private version of the report

Recommendations | Recommendation 2.B: Assess cooperatives' financial capacity and resilience

This information is only available in the private version of the report

Strategic investment in cooperative development is required to increase the resilience of cooperatives as business partners in a competitive local value chain reached with a Cooperative Development Program

Segment

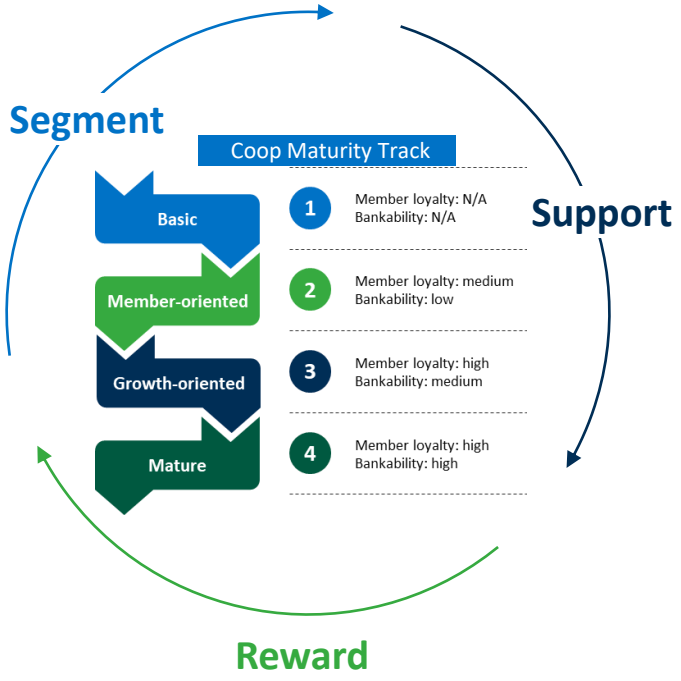
Define minimum criteria based on which a selection of cooperatives can be onboarded onto the Cooperative Development Program. At the start of each performance improvement cycle (annual or once every two years), cooperatives can be segmented by assessing the level of member loyalty and level of professionality. Such a segmentation allows Sucden to plot cooperatives on the Coop Maturity Track and forms the starting point of the graduation path for each participating cooperative.

Support

Each graduation step on the path to maturity comes with additional support from Sucden to the cooperative. The type of support is focussed on preparing the cooperative to make the next step on the maturity track towards the Mature segment.

Reward

We believe that the best way to reward for becoming a more effective business partner is financially and we propose several financial incentives for Sucden to consider.
This is to be complemented by symbolic reward in the form of recognition of performance.



A Cooperative Development Program would bring together traditional cooperative capacity building with increased 'security of demand' for cooperatives, allowing cooperatives to develop themselves into preferred suppliers to Sucden. The blueprint for the program as set out in this section can be seen as the operationalization of Sucden's ambition to bring cooperatives to higher levels of professionalism. The investment by Sucden will initially consist primarily of human resources and financial incentives.

Strategic investment in cooperative development is required to increase the resilience of cooperatives as business partners in a competitive local value chain with cooperatives developing along a Maturity Track

Coop Maturity Track		Example thresholds per level	
		Member loyalty / characteristics	**Professionality**
Basic	1	No thresholds applicable	No thresholds applicable
Member-oriented	2	✓ **Off-take from farmers is structurally agreed in advance:** >95% of projected volume to be traded, is agreed with individual farmers during the harvesting season ✓ **Farmer compliance is structurally administered:** >90% of volume is traded according to agreements, and this is reported to coop management at the end of each season	✓ **Farmers are structurally paid timely:** ≥ 50% of premium received is paid out to members ✓ **Coop budgets and reports against budget annually:** EBITDA vs budget is reported to Sucden annually, Debt Service Coverage Ratio is captured ✓ **Coop professionality score**: beginner
Growth-oriented	3	✓ **Off-take from farmers is structurally agreed in advance:** >99% of projected volume to be purchased from farmers, is agreed with farmers at the start of the harvesting season ✓ **Farmer compliance is structurally administered:** >95% of volume is traded according to agreements, and this is reported to coop management at the end of each season	✓ **Farmers are structurally paid timely:** ≥ 50% of premium received is paid out to members, and ≥ 10% of payments is performed digitally ✓ **Coop budgets and reports against budget annually:** EBITDA vs budget is reported to Sucden annually, Debt Service Coverage Ratio is captured ✓ **Coop professionality score**: medium
Mature	4	✓ **Off-take from farmers is structurally agreed in advance:** >99% of projected volume to be traded is agreed with individual farmers at the start of the cultivation season ✓ **Farmer compliance is structurally administered:** >95% of volume is traded according to agreements, and this is reported to coop management at the end of each season	✓ **Farmers are structurally paid timely:** ≥ 60% of premium received is paid out to members, and ≥ 25% of payments is performed digitally ✓ **Coop budgets and reports against budget annually:** EBITDA has been growing for 2 consecutive years, Debt Service Coverage Ratio is > 1.25 ✓ **Coop professionality score:** professional

Strategic investment in cooperative development is required to increase the resilience of cooperatives as business partners in a competitive local value chain by selected coops joining the Coop Program

COOP PORTFOLIO

Select

We recommend Sucden to decide on a set of relevant and easy-to-assess minimum criteria to select which cooperatives are eligible for participation in the Cooperative Development Program, for example:

1. Minimum area under management
2. Minimum volume of cocoa traded in previous year
3. Minimum number of farmers
4. Insight into their farmer base related to household size, land-size, and tree-age

Segment

SUCDEN COOP IMPROVEMENT PROGRAM

Support

1. **Basic:**
   - ❑ Provide off-take guarantee to coop through timely contracting
   - ❑ Temporary second project manager to support with setting up farmer management system to capture agreements and level of compliance
2. **Member-oriented:**
   - ❑ Contractually guarantee timely payment to coop
   - ❑ Temporary second financial expert to support with setting up financial budgeting and reporting system
   - ❑ Support cooperative in rolling out mobile banking, finance risk mitigation, and crop insurance
3. **Growth-oriented:**
   - ❑ Provide support in onboarding of financing facility
   - ❑ Support coop with external assessment (SCOPEinsight, Agriterra or other) to identify remaining gaps to close
4. **Mature:**
   - ❑ Provide continuous support in onboarding of financing facility

Coop Maturity Track

1. **Basic:**

Insight into growth potential through customized cooperative P&L projection (using SDM analysis tooling)

2. **Member-oriented:**

Bonus per Mt for achieving overall compliance of farmers with off-take agreements of >75%

3. **Growth-oriented:**

Additional bonus per Mt for achieving overall compliance of farmers with off-take agreements of >85%

4. **Mature:**

Additional bonus per Mt for achieving overall compliance of farmers with off-take agreements of >95%

All segments:

Organize annual Cooperative Academy in which assessment results are announced and graduations celebrated, with symbolic prize for best performing cooperatives

← Back to Summary

Establish financial solutions that are facilitated by a digitally-driven infrastructure that not only safeguards project impacts, but also secures and increases sustainable cocoa supply

Recommendation 3:
Invest in financial and digital capacity to secure the long-term resilience of the decentralized SDM approach, mitigating financial risks borne by farmers / coops and leveraging developed digital solutions, securing and increasing sustainable cocoa supply.

Pillar 2

3.A

Finance facility - Connect with external finance providers to build and manage a feasible financing facility and structure, while leveraging the local context.

Go to recommendation

3.B

Product offering - Evaluate financing product offering to provide a complete portfolio of financial products that aligns to farmers'/coops' needs and feasibility.

Go to recommendation

3.C

Digital tailoring - Leverage FinTech solutions to facilitate effective and efficient use of digital money / finance, empowering women and creating incentives to invest in sustainable cocoa.

Go to recommendation

3.D

Digital capacity -
Prolong/invest in digital platforms to effectively collect and analyse data on coops and farmers while increasing traceability, attracting brands / impact investors to continue their contribution to sourcing sustainable cocoa.

Go to recommendation

Swiss Confederation Federal Departement of Economic Affairs, Education and Research EAER State Secretariat for Economic Affairs SECO
Ministry of Foreign Affairs
DANIDA

S&D SUCDEN COCOA
the sustainable trade initiative

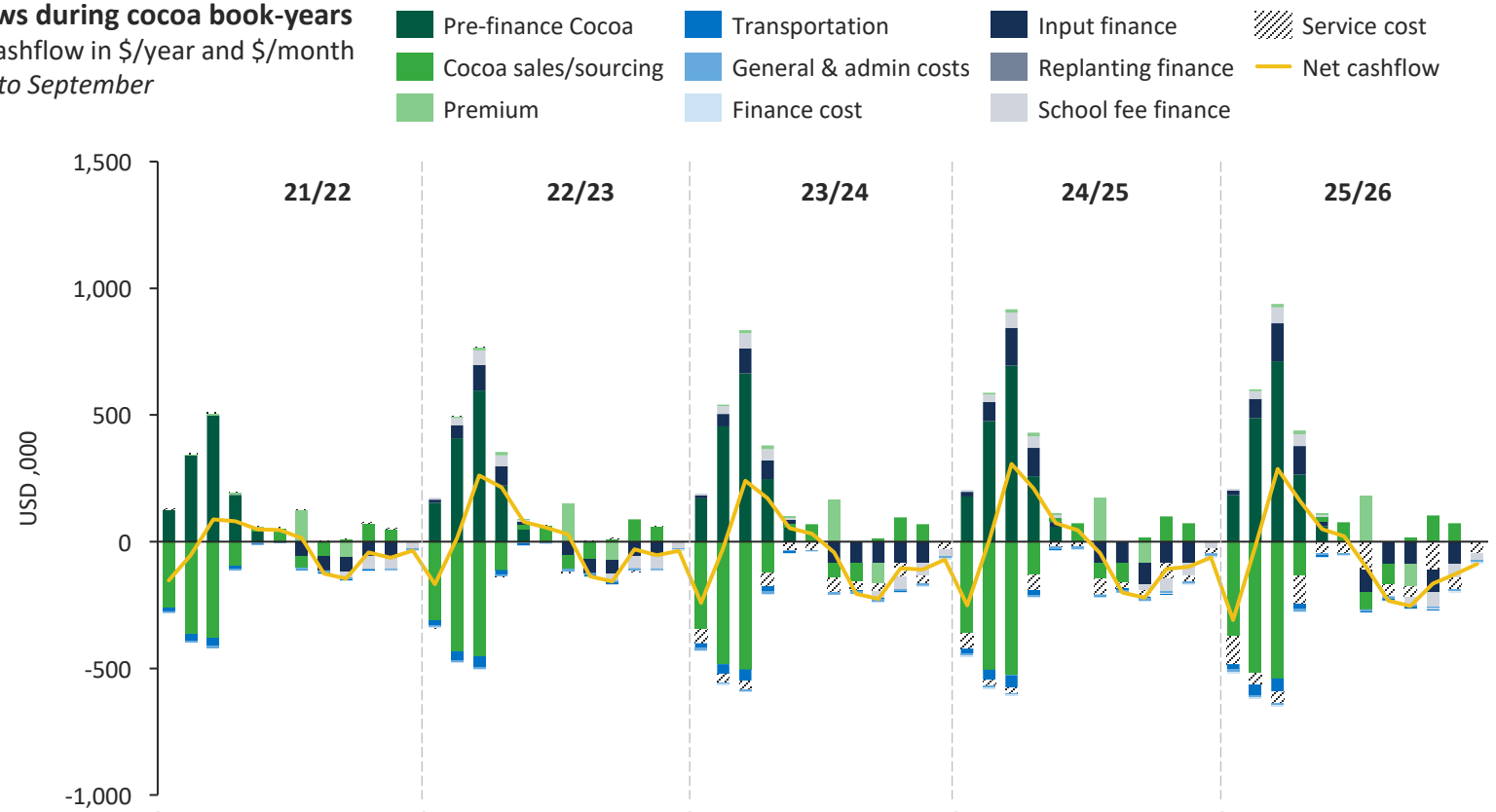
Recommendations | Recommendation 3.A: Finance facility and structure

This information is only available in the private version of the report

Providing input, replanting, and school fee finance to farmers, exposes cooperatives to significant working capital requirements, that could be backed by finance facilities such as FCIP

Smallholder Coop *(Partly based on cooperative B)*

Cashflows during cocoa book-years
5-year Cashflow in $/year and $/month
October to September



	21/22	22/23	23/24	24/25	25/26
Revolving finance	1,195,536	1,430,878	1,594,094	1,666,317	1,708,954
Input finance	-281,630	-274,436	-414,826	-418,036	-443,336
Replanting finance	0	0	0	0	0
School fee finance	-144,253	-147,859	-151,556	-155,345	-159,228

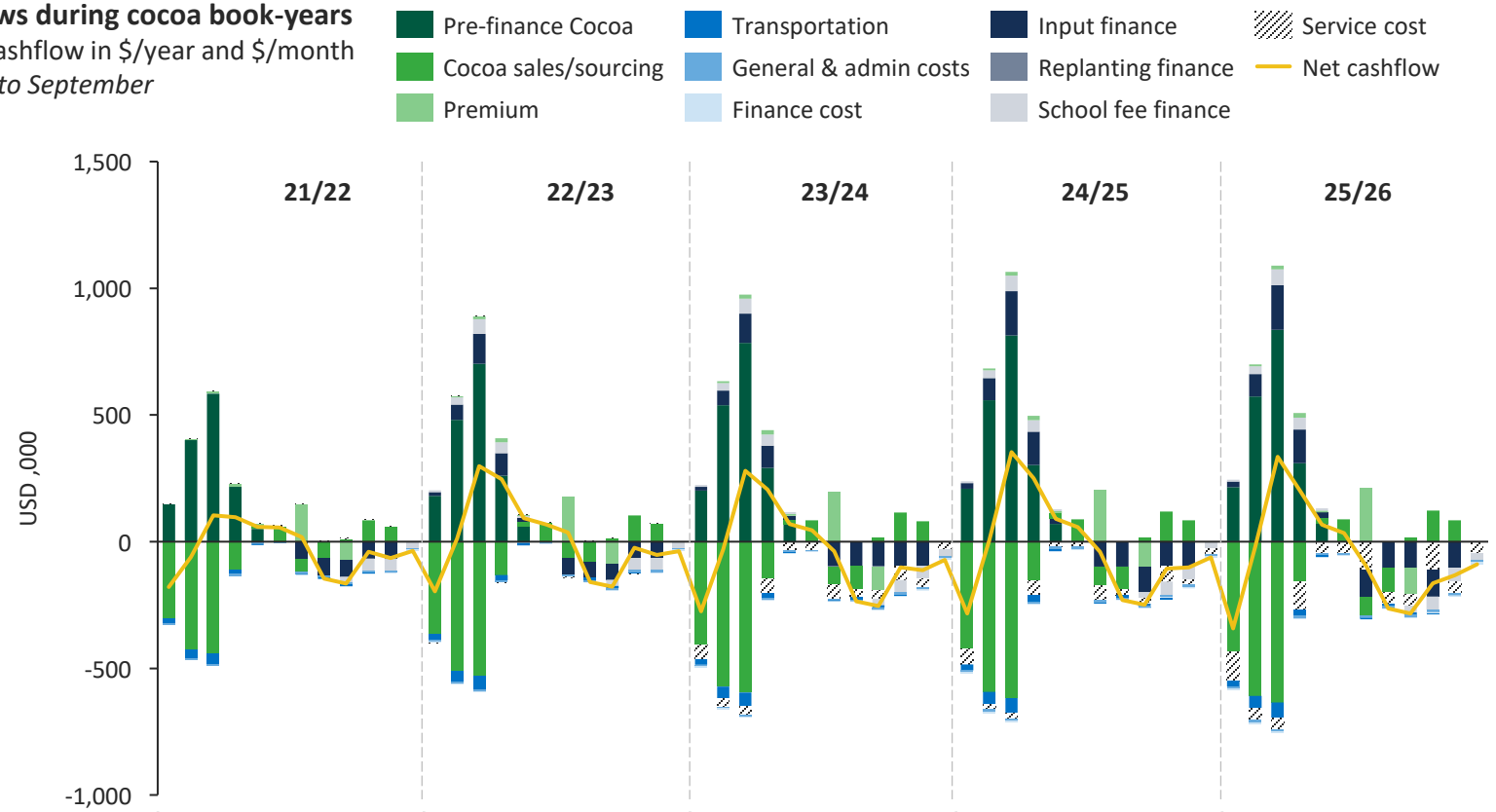
Reflections

- Net cashflows mirror the activities of the cultivation calendar, with cash constraints between May –Sept and in the beginning of the harvesting season (Oct/Nov). There is a cash surplus between Dec –Apr.
- The total input finance facilitated increases for input finance, which is provided during the time of cultivation (April – Aug) and repaid during the harvesting time (Oct – Feb). Total volume increases from 282k $/year to 443k $/year in 25/26 (+57%), with a ticket size increasing from 282 $/year to 402 $/year.
- The replanting finance facilitated is not required as the farmer base is predominantly consisting of farmers with young cocoa trees on their farm
- School fees are provided from 21/22 with the total finance provided increasing as the number of farmers served, and hence children to pay school fees for, increases. The volume increases from 144k $/year to 149$/year in 25/26 (+10%), with an assumed farmer HH annual ticket size of 144 $/year

Providing input, replanting, and school fee finance to farmers, exposes cooperatives to significant working capital requirements, that could be backed by finance facilities such as FCIP

Smallholder Coop *(Partly based on cooperative A)*

Cashflows during cocoa book-years
5-year Cashflow in $/year and $/month
October to September



	21/22	22/23	23/24	24/25	25/26
Revolving finance	1,401,796	1,684,594	1,883,796	1,954,764	2,006,389
Input finance	-329,603	-321,183	-485,486	-489,243	-518,853
Replanting finance	0	0	0	0	0
School fee finance	-144,253	-147,859	-151,556	-155,345	-159,228

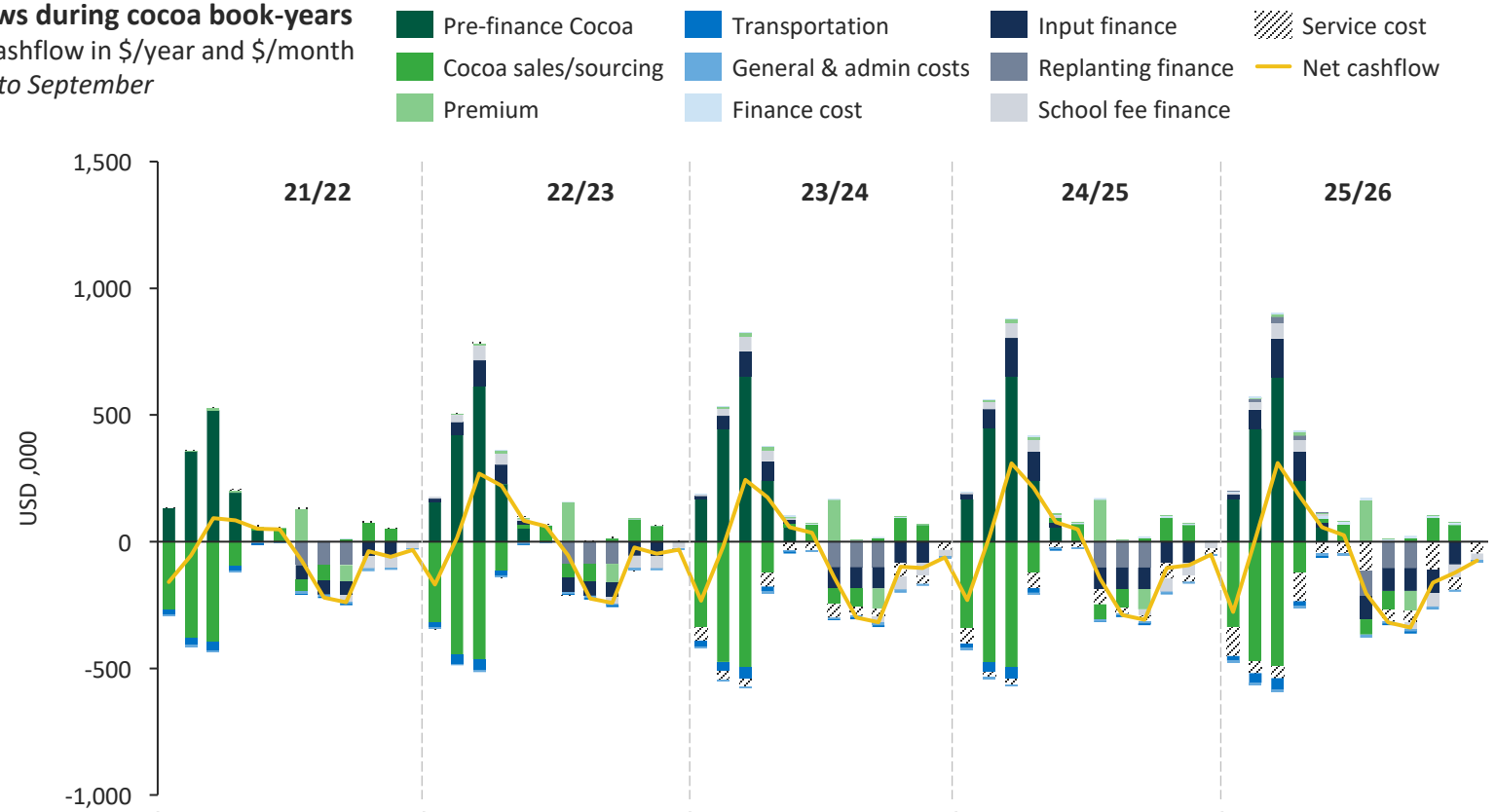
Reflections

- Net cashflows mirror the activities of the cultivation calendar, with cash constraints between May –Sept and in the beginning of the harvesting season (Oct/Nov). There is a cash surplus between Dec –Apr.
- The total input finance facilitated increases for input finance, which is provided during the time of cultivation (April – Aug) and repaid during the harvesting time (Oct – Feb). Total volume increases from 329k $/year to 518k $/year in 25/26 (+57%), with a ticket size increasing from 330 $/year to 470 $/year.
- The replanting finance facilitated is not required as the farmer base is predominantly consisting of farmers with young cocoa trees on their farm
- School fees are provided from 21/22 with the total finance provided increasing as the number of farmers served, and hence children to pay school fees for, increases. The volume increases from 144k $/year to 159k $/year in 25/26 (10%), with an assumed farmer HH annual ticket size of 144 $/year

Providing input, replanting, and school fee finance to farmers, exposes cooperatives to significant working capital requirements, that could be backed by finance facilities such as FCIP

Smallholder Coop *(Partly based on cooperative C)*

Cashflows during cocoa book-years
5-year Cashflow in $/year and $/month
October to September



	21/22	22/23	23/24	24/25	25/26
Revolving finance	1,246,314	1,470,850	1,564,623	1,567,241	1,558,507
Input finance	-284,295	-277,033	-418,750	-421,991	-447,530
Replanting finance	-276,914	-263,068	-301,144	-305,820	-312,004
School fee finance	-144,253	-147,859	-151,556	-155,345	-159,228

Reflections

- Net cashflows mirror the activities of the cultivation calendar, with cash constraints between May –Sept and in the beginning of the harvesting season (Oct/Nov). There is a cash surplus between Dec –Apr.
- The total input finance facilitated increases for input finance, which is provided during the time of cultivation (April – Aug) and repaid during the harvesting time (Oct – Feb). Total volume increases from 284k $/year to 448k $/year in 25/26 (+57%), with a ticket size increasing from 284 $/year to 405 $/year.
- The replanting finance facilitated is issued between April – May, with the total volume increasing from 277k $/year to 312k $/year in 25/26 (+13%), with a farmer ticket size averaging 277$/year.
- School fees are provided from 21/22 with the total finance provided increasing as the number of farmers served, and hence children to pay school fees for, increases. The volume increases from 144k $/year to 159k $/year in 25/26.

Reacting to six findings related to the increase in mobile money usage by women, Sucden can leverage these developments for its gender projects by increasing digital literacy and transitioning to mobile money usage

Finding 1	Finding 2	Finding 3	Finding 4	Finding 5	Finding 6
The COVID-19 pandemic has accelerated the adoption of mobile money services among men and women.	*Mobile money is transitioning from an everyday cash replacement to a true banking alternative, but women entrepreneurs tend to use a narrower range of services than men*	*Most male and female mobile money users anticipate that they will use mobile money as often, if not more, in a post-COVID world*	*There are opportunities to increase awareness and use of mobile money services beyond payments, particularly among women entrepreneurs*	*Women, including entrepreneurs, need more support from others to learn about and use mobile money*	*Sustaining mobile money usage among new male and female users who signed up during COVID-19 will require overcoming some additional barriers*
▪ This opens the possibility to rely more on mobile money but also exposes Sucden to providing digital literacy training as recent mobile money adopters are less likely to understand MoMo, to have registered for their own account, to have tried it by themselves, or to biregular users.	▪ Mobile money is perceived as less convenient by women because women are more likely to rely on others to perform mobile money transactions and have less confidence using mobile money unassisted, due to lower awareness of the range of mobile money services.	▪ Reasons to continue the use of mobile money are related to simplicity of managing finance, making payments, and businesses not accepting other ways of payment. Hence, users experience a long-term motivation to continue using mobile money.	▪ By increasing awareness and offering of airtime top-ups, bill payments, supplier or salary payments Sucden will be able to help women entrepreneurs and farmers to reap the same benefits as many male entrepreneurs are experiencing.	▪ When first learning about mobile money, female users are significantly more likely to seek assistance from family members than male users, showing a potential angle on how to design a digital / financial training package through a household wide literacy training approach.	▪ The top five barriers to overcome are related to 1) the lack of need to use mobile money, 2) the need to operate with an agent, 3) the high costs to use mobile money, 4) lack of knowledge on how to use mobile money, and 5) the perception of mobile money.

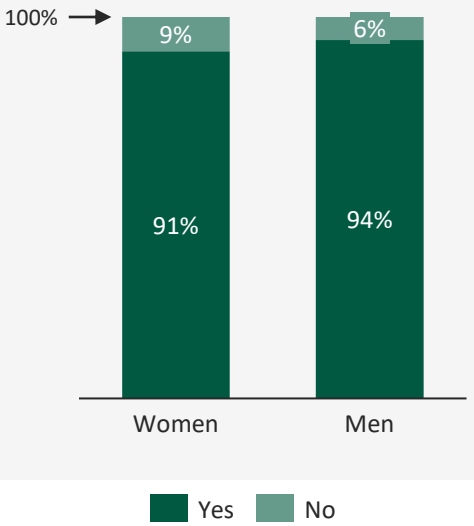
Sources: GSMA (2022)

← Back to MM Findings

By initiating a mobile money cycle to pay school fees, Sucden creates and builds upon a proven mutually beneficial cycle, while ensuring sustainable use of cocoa premiums paid to cocoa farmers

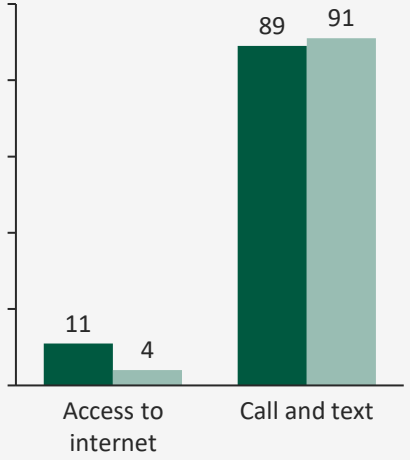
Access to a phone [1)]

Do you have a mobile phone?



Phone functionalities [1)]

What functionalities does your mobile phone have?

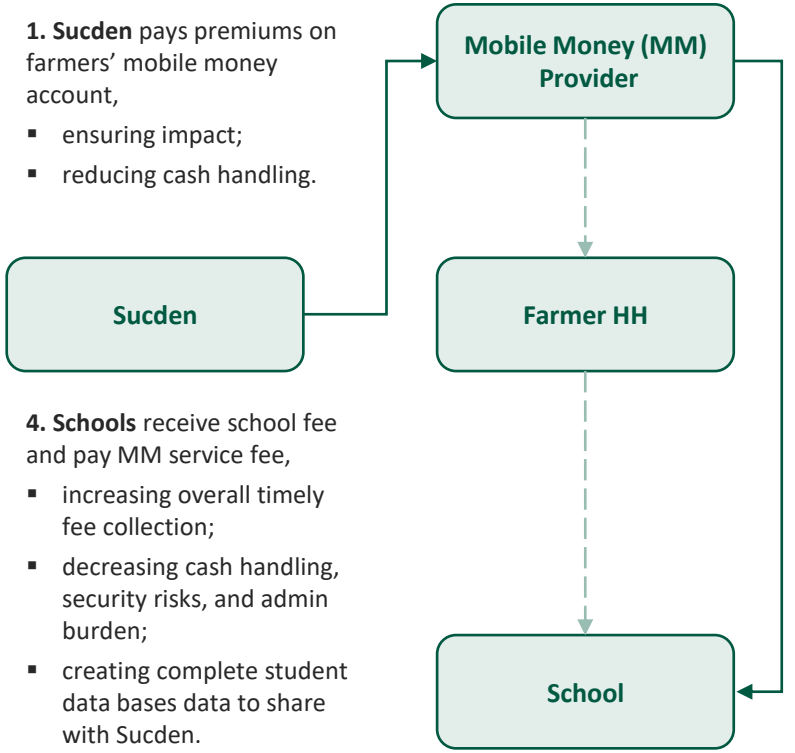


- Most of the women and men Sucden sources from have a mobile phone, although, as shown from the previous findings, they don't always have the digital literacy to utilize all functionalities;
- Although the functionality of mobile phones owned is limited to call and text functionalities for the majority of users, this already suffices the functionalities required to access mobile money.

Creating a closed loop [2)]

1. Sucden pays premiums on farmers' mobile money account,

- ensuring impact;
- reducing cash handling.



2. MM-Providers receive, save, label, and pay school fees directly to the school with premium balance on MM-account,

- increasing MM usage and transaction from clients;
- enhancing value proposition;
- covering service costs.

3. Farmer HH give their digital approval to pay the fee to a particular school of choice,

- reducing time, cost and security concerns of queuing to make cash payments;
- increasing transparency in terms of pricing;
- increasing confidence in aligned proof of payment receipts.

4. Schools receive school fee and pay MM service fee,

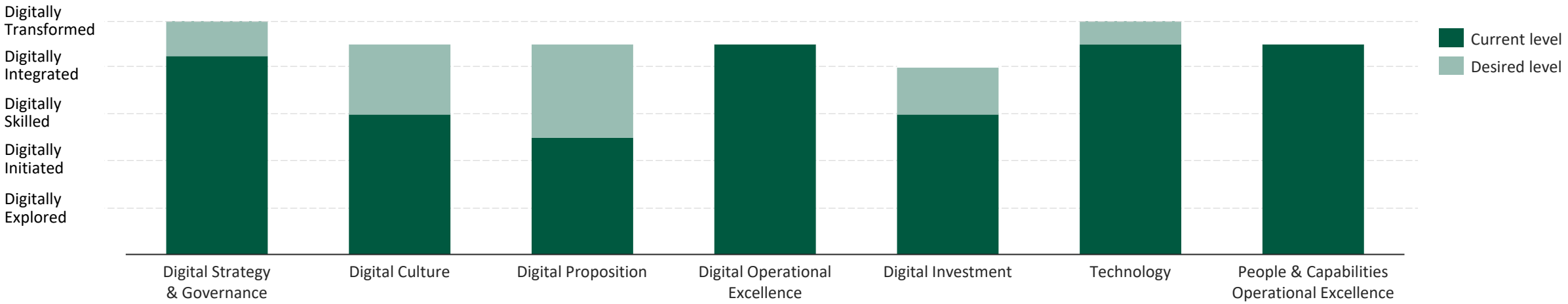
- increasing overall timely fee collection;
- decreasing cash handling, security risks, and admin burden;
- creating complete student data bases data to share with Sucden.

Periodization of mobile money process:

Set-up	Payment phase	Settlement phase	Evaluation
mid-May > mid-June	*mid-June > mid-Sept*	*mid-Oct > mid-Dec*	*March*

Sources: Sucden PDC (2020), 2) GSMA (2015)

Digitally mature, Sucden should ensure that not only its internal organization but also its farmer-base and other stakeholders stay aligned with and equipped to work with future digital innovation



Results

The digital maturity assessment for Sucden CI shows that the organization is very digitally mature:

- Overall Sucden CI can rely on IT support and architecture from the mother company and hence is facilitated in all aspects of digitization
- There is a clear strategy and priority on management level, supported with sufficient investment budget to realize data security (ISO) and utilization
- Sucden CI is testing and trying different advanced technological solutions to identify which of these could benefit the Sucden organization and its stakeholders

Risks & key barriers

- Possible large dependency on Sucden Paris IT architecture and IT/Cyber support shows some threat and vulnerability to Sucden specific activities and flexibility
- Digital/financial literacy and access to digital/finance solutions (e.g., mobile phones, stable/cheap internet, mobile money) of Sucden's farmer base might slow down the movement towards the adoption of digital solutions with biggest impact potential
- Ability to hire the right people with the right skills to accommodate the digital agenda of Sucden

Recommendations

- Continue with the focus on digitization from a strategic perspective, including the embedding of the ERP-system, connecting to IT, training on farmer digital literacy, and increasing access to digital solutions/finance.
- Ensure employees from all layers of the company are onboarded with the digital agenda, to avoid a lack of alignment and working at different speeds
- Develop a simplified digital roadmap for everyone in the company to fully understand and identify key milestones. This will increase the adoption of the digital agenda, onboard all relevant stakeholders, and provide a framework in which the long term implementation of the strategy is safeguarded

To assess the digital maturity the DMA tool was filled in based on answers given and expert judgement from the IDH interviewees. For all questions, the average score given is shown in the dashboard as the result. See annex for definitions of maturity variables.

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Annex

The Annex provides a more detailed explanation of Sucden's SDM, more detailed analyses on the SDM, cooperatives, and farmers and a description of the context of cocoa in Ivory Coast

ANNEX OVERVIEW

Context	Sucden SDM	Cooperatives	Farmer base	Assumptions
Describes different aspects of the context of the Cocoa industry in Ivory Coast related to demand/supply, function of CCC, enabling environment, and quick scan on gender, food security, and climate change, and living income.	Provides a detailed insight into Sucden's SDM on strategy, business model, stakeholders, structure, and service performance	Reflects on the visit to two of Sucden's cooperatives, and provides a detailed analyses of each of the five cooperatives in scope on farmer satisfaction and financial performance	Explains the distribution of Sucden's farmer base to established farmer segment and provides a detailed 10-year P&L plus cashflow of each of the segments	Discloses key assumptions used for the analyses in this SDM Analysis on SDM, Coop, and Farm-level and provides insight into the methodology of the digital and gender assessment
Go to Context	*Go to Sucden SDM*	*Go to Cooperatives*	*Go to Farmer base*	*Go to Assumptions & Meth.*

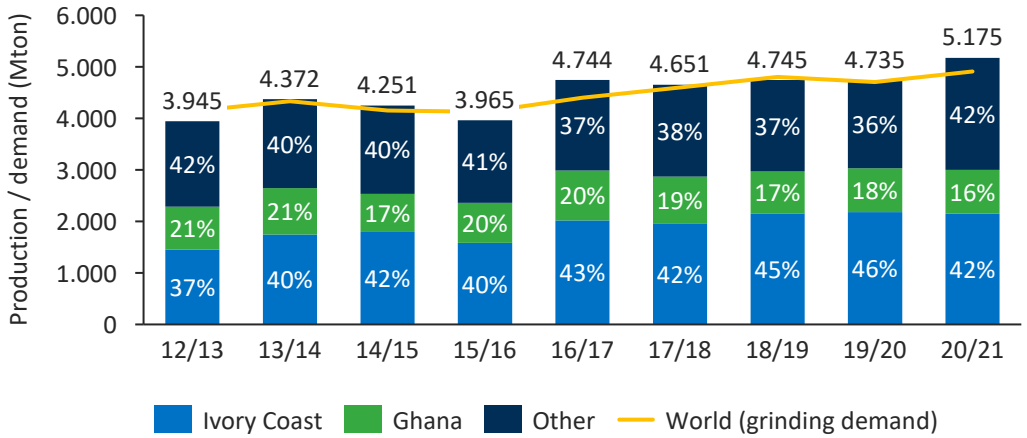
About the context

Understanding the context of the SDM

Ivory Coast and Ghana cultivate most of world cocoa supply, and by setting a seasonal fixed farm-gate price Ivory Coast and Ghana combine efforts to increase smallholder income

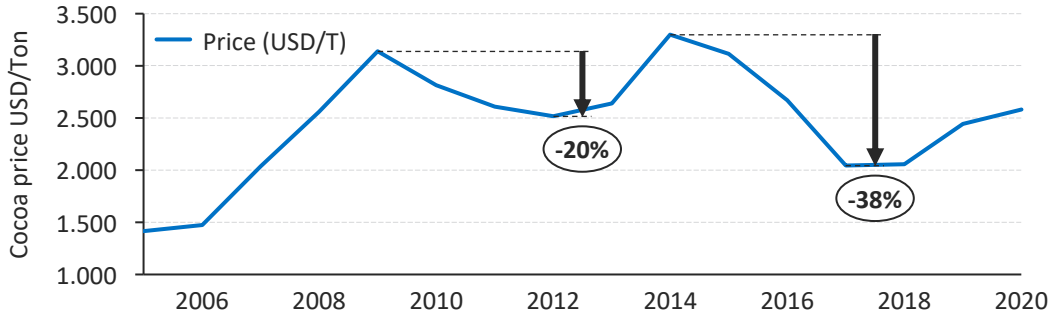
Surplus between supply and demand is present in multiple harvest periods

Production and demand (Mton) of cocoa beans per country [5) /7)]



Cocoa prices are highly volatile with extreme drops due to over-supply

Cocoa price in USD/Ton between September 2005 and September 2020 [4)]



State of the demand / supply

- Since 2011, the Conseil du Café-Cacao (CCC) is responsible for the execution of the **price stabilization system**. Through a PVAM (Programme of Anticipated Sales) the CCC pre-sells 80% of the expected total harvest in the year before the harvest season starts, and the **farm gate price is fixed at 60%** of the value of this pre-sale. Every year in September.[2)]
- To **mitigate cross border selling** between Ivory Coast and Ghana, the cocoa price of both countries are set together. For season 2020/21, the price was set on 1,000 CFA/kg.[3)] For the 2021/22 season the price is lowered to 825 CFA/kg excl. LID.[4)]
- The majority of cocoa beans is grinded in Europe while **only +/- 10% is ground locally in the Ivory Coast**. Cocoa **processors and the Ivorian government are expanding the Ivorian grinding capacity** in response to CCC's 2016-2020 National Development Plan.[5) and 8)], although exporters face challenges to increase their grinding capacity, including global overcapacity and the inability to hedge. [8)]

State of the price

- The **high cocoa price in 2003 and 2008** incentivized cocoa farmers to expand their cocoa plantations. As a result, the **price dropped extremely in 2012 and 2016** due to over production, as a cocoa tree needs 5 – 8 years to mature. [4)] However, the price increased in 2014 as a reaction to the increasing demand for cocoa from Asia. [6)]
- **Ivory Coast cultivates at least 40% of worldwide cocoa**. Combined with Ghana (neighbour country), they produce close to two third of world cocoa supply. [3)]

Sources: 1) KIT (2018); 2) AUAS (2018); 3) Reuters (2019); 4) AfricaNews (2021); 5) Statista; 6) Financial Times (2014); 7) ICCO (2021); 8) Reuters (2020)

Interventions by the CCC on price, productivity, and diseases are aimed to increase the resilience of the Ivorian cocoa industry for both smallholders and exporters

Goals

- Strengthen good governance, and develop a sustainable cocoa economy
- Secure income of producers by setting up a guaranteed minimum price as well as the improvement of internal and external marketing
- Establish a strong value chain based on credible producer organizations

Price Interventions

- CIF (Cost, Insurance and Freight) reference price is established by CCC at the start of every harvest
- CCC correction payment with exporters will take place if actual prices deviate from CIF
- CCC set a Living Income Differential, a fixed premium per tonne of cocoa. Funds raised by the (LID) will be used to help increase payments to farmers.

Productivity Interventions

- Limit exporters to directly provide yield enhancing services to smallholders (e.g. fertilizer, crop protection, etc.)
- Pause the collaboration with exporters and ANADER to provide seedlings through nurseries to smallholders
- Allows cooperatives to facilitate the purchase of inputs by farmers.

Diseases Interventions

- Establish land clearing programs to clear 100,000 ha of plantations infected with swollen shoot
- Incentive smallholder to clear plantations infected with swollen shoot with a grant and inputs.
- Strengthen knowledge of Swollen shoot in collaboration with ANADER.

Sources: 1) CCC (2018) Projet nationale de lutte contre le swollen shoot; 2) CCC (2012) Reforme de la filiere Conseil Cafe-Cacao; 3) CCC (2015) Decree No. 2017-321 of May 24, 2015; 4) Business & Human Rights Resource Centre (2019)

Low digitalization of transactions, decreasing yields due to climate change and low availability of affordable labor provide high potential impact areas of digitalization and adequate service provision

Definition	Situation	Implications on SDM
TECHNOLOGY *Technology availability, research & development, delivery and adoption*	**Low digital payment levels** | Currently, only 10% of farmers are being paid digitally for their cocoa through a formal procurement system; rest are paid with cash-on-delivery.[1]	• This makes the enforcement of minimum farmgate price payment by middlemen/traders very difficult as payments are hard to track. • This also reduces farmers' access to favorable formal credit as they lack verifiable financial records. • It presents dangerous conditions for cooperative leaders who withdraw and travel distances with large sums which leads to roadside robbery.
ENVIRONMENT *Climate change, possibility of extreme weather, soil type, water supply and quality, pests and diseases. Potential environmental damages such as deforestation*	**Climate change** | cocoa farming in north-east is significantly affected by prolonged dry season, increasing temperatures and changes in rainfall pattern and quantity. Furthermore, farmers may increasingly move to areas located in the forest-rich south-western regions of Cote d'Ivoire (Bas-Sassandra region) due to its more favorable climatic conditions for future cocoa production.[2] **Deforestation** | Increase in cocoa production has led to a significant protected forest areas coming under cocoa cultivation. Currently, only 10.6% of the country remains forested.[4]	• Uptake of drought-tolerant and climate-resilient varieties[3] of non-cocoa crops will increase in importance. • The importance of the Bas-Sassandra region as sourcing region increases. At the same time, the land and forestry resources in this region will face a threat from increased cocoa activity.
LABOR *Existence and state of roads, water and electricity networks as well as proximity to main trading / processing hubs (e.g. access to market)*	**Availability and affordability** | Studies suggest that labor availability and affordability is a challenge, due to the availability of alternative earning options for the labor force. Also, higher wages are expected for higher intensity of the work, which is the case in cocoa farming. However, the cocoa households are reluctant to meet laborers' wage demands.	• This means, while labor cost/FTE remains high, farmers are expected to engage limited hired labor to minimize total labor expenses. Furthermore, adoption of farming practices & technologies that optimize labor requirement can improve farmer incomes. • Cooperatives can play a key-role in providing professionalized labor services to farmers. The labor services often consists of youth of farming households, which can be a lucrative income generating activity (IGA) for the HH.

Sources: 1) World Cocoa Foundation (2020) 2) KIT (2018) 3) CORAF (2018) 4) Mighty Earth (2018) 5) Dalberg (2015)

Lack of (in)formal finance increases the present challenge of accessing quality inputs, while low land tenure decreases farmers' incentive to invest in rejuvenation / diversification

Definition	Situation	Implications on SDM
INPUTS *Availability of affordable, quality inputs and the necessary marketing and distribution mechanisms.*	**Fertilizer** | Only 12-15% of cocoa farmers use fertilizers. Fertilizer uptake by farmers is a strong function of their purchasing power. This is in line with the observations across past SDM analyses (by IDH in Cote d'Ivoire on cocoa) that fertilizer is the most significant farming cost. Furthermore, inefficient fertilizer usage and limited availability, affordability, and low quality of fertilizer formulation have been identified as key farmer challenges. **Renovation and rehabilitation (R&R)**| Overall 30% of SHF land under cocoa cultivation needs renovation and 51% rehabilitation. The country-wide avg. age of cocoa trees is expected to be between around 16-25 (after 25 years, the tree productivity starts declining)[5].	• Improving the access and affordability of planting materials will become a key intervention, especially because only 10% of planting material needed to cover CDI's replanting need is available.[5] • Replanting and rejuvenation will greatly enhance the impact of services provided to farmers, such as GAP training, access to fertilizer, pesticides and other inputs.
FINANCING[1] *Availability of credit. Enabling regulatory environment*	**Availability of credit** | Around a quarter of cocoa farmers take some kind of credit, mostly ranging between US$50 and US$250. In practice, the easiest way for cocoa farmers to access small loans is through local cocoa buyers, cooperatives or family/friends instead of through banks. Collateral is not often required when accessing such credit or, if it is, the value of a household's crops can be used as a guarantee. **Use of credit** | Loans are not sufficient to cover all required cost. Since school fees and household needs take precedence, credit is typically not used to purchase inputs, or to hire labor.	• Access to formal and favourable credit may become a necessary service to support the additional (as compared to the baseline) on-farm investments of SDM farmers for replanting and diversification. • If coops transition towards diversified business models selling additional products, this could open the doors for females/youth in cocoa households to access investment capital (micro-loans)
LAND TENURE *Existence of land ownership rights / regulations and their enforcement.*	Rural Land Tenure Agency (AFOR) has been established to identify and formalize the boundaries between rural villages, and to clarify the land property rights of rural landholders. However, the current land tenure system in Côte d'Ivoire is still regarded as complicated, costly, and outdated. As a result, farmers are reluctant to implement agroforestry or rejuvenation.	• Farmers' investment decisions in cocoa production are observed to be directly linked to land tenure arrangements and land security. Therefore, adoption of investment intensive interventions may be difficult among the farmers with uncertain land tenure.

Sources: 1) World Cocoa Foundation (2020) 2) KIT (2018) 3) CORAF (2018) 4) Mighty Earth (2018) 5) Dalberg (2015)

Child labor is a persistent challenge with smallholders having limited ability, trust and incentive to use the current cocoa market infrastructure and potential

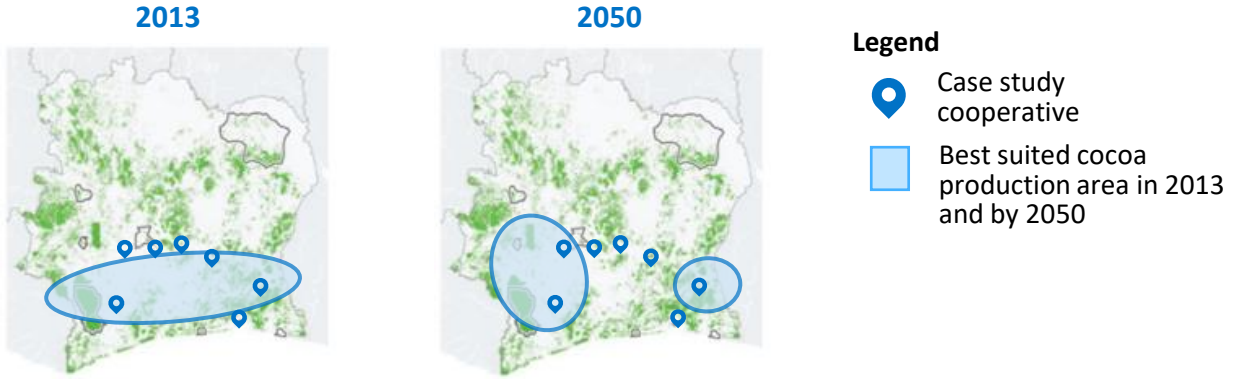
Definition	Situation	Implications on SDM
TRADING SYSTEMS, PRICING, AND COMPETIIVENESS *(some aspects covered in the section on market)*	**Direct buyers from farmers**| Around 65% of cocoa is sold via small-scale collectors with little tradition of farmer loyalty to these traders. This has resulted in short-term and insecure contracts, and widespread side-selling[6]. **LID and volatility** | With the introduction of the Living Income Differential (LID) and the increased market volatility that this has generated, some buyers commit to volumes, as the season progresses, which makes it difficult for to commit to the cooperatives for certain volumes and by proxy to the farmers. **Incentive for quality** | Fixed prices by CCC mean that price differentiation for better quality is not possible. However, premium payments for certified cocoa are possible[1].	• Managing farmer loyalty and developing long-term relationships will be a key challenge. Services and incentives to the farmers need to be ensured to mitigate this risk. • No quality premium creates the risk of race to the bottom in terms of quality. • Difficulties in gaining the commitment of the end buyer for sustainable cocoa program volumes.
INFRASTRUCTURE / INSTITUTIONAL STABILITY *Existence and state of roads, water and stable political environment*	**Infrastructure** | The situation of public infrastructure, such as roads, ambulances, schools, extension services is still poor. A part of the cocoa revenues received by the CCC are reinvested in the sector and in general public goods. However, there is a perceived lack of transparency in decision-making and resource allocation[6]. **Distrust in institutions |** Institutions such as formal cooperatives (covering 20% of the farmer base) and financial institutions are often perceived with mistrust by cocoa farmers. This inhibits the effective integration of farmers into formal systems[1].	• Inefficiencies in infrastructure are expected to drive costs and reduce the value distribution to farmers. • Transparency, good-governance and information sharing by institutions engaged in SDM may lead to increased farmer engagement.
SOCIAL NORMS *Availability and quality of schooling and healthcare. Cultural factors. Potential social externalities like child labor, gender disparity*	**Child labor|** Despite more than a decade of efforts, the numbers on child labor are still very high. Root causes – such as farmer poverty, absence of and access to good schools, inadequate local infrastructure, lack of awareness etc. – need to be appropriately addressed. However, it has also been shown that farms with higher productivity may increase child labor risk - as those farmers may rely more on household labor due to insufficient availability of hired labor/professional labor. **COVID-19 |** The coronavirus pandemic may exacerbate child labor practices because schools are closed to prevent the spread of the virus and monitoring groups are less able to circulate in at-risk communities. [7)] **Gender |** Please refer to the discussion in the section on gender	• Child labor is a potential risk for Sucden's SDM. Service provision to mitigate child labor root causes are typically best explored with suitable partners.

Sources: 1) KIT (2018) 3) CORAF (2018) 4) Mighty Earth (2018) 5) Ecookim (2015). World Agroforestry Centre "An Overview of Cocoa Production in Cote d'Ivoire and Ghana " 6) VOICE (2018) 7) Cosgrove (2020)

Cocoa cultivation area is expected to shift towards west Ivory Coast by 2050, increasing the risk of deforestation of limited remaining forest areas

Suitable cocoa production area is expected to shift to west Ivory Coast.

Locations of Sucden's farmer coops in Ivory Coast with best suited cocoa production indicated.[1) 2)]

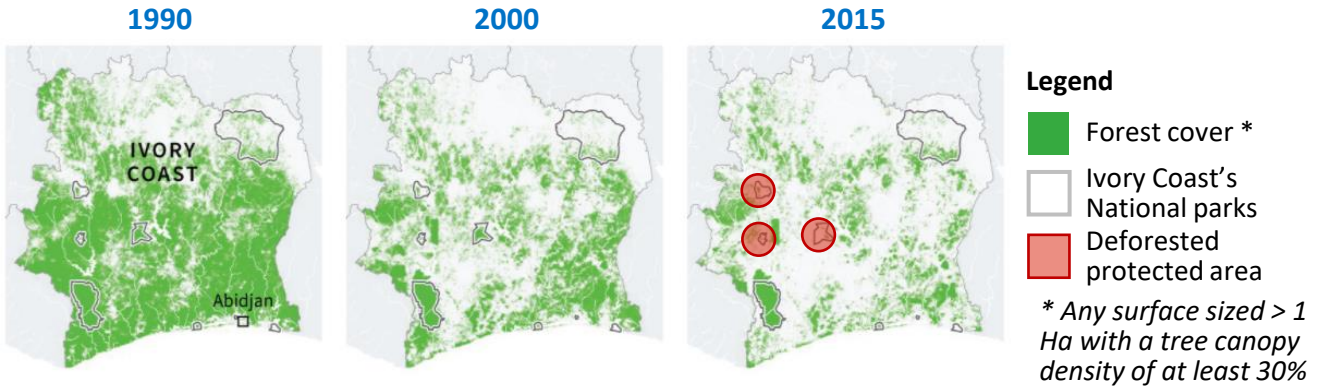


Characteristics

- The **best suited areas** to cultivate cocoa in Ivory Coast are in the **southeast and southwest** in 2013. By 2050 the best suited areas are expected **to move towards the southwest of Ivory Coast**.[1)]
- The concentration of best suited area **leads to further deforestation of remaining forest covered protected areas** (e.g., Mont Peko, Goin Debe, and Cavally).[3)]
- The cocoa cu**ltivation regions in Ivory Coast have different characteristics** in terms of the cocoa cycle, available land, and infection rate of the Swollen shoot (shown in the below table).

Significant deforestation concentrates forest areas around Ivory Coast's National parks.

Forest cover in Ivory Coast per 1990, 2000, and 2015.[3)]



Cocoa cultivation regions differ significantly.

Qualitative summary of regions' main characteristics.[4)]

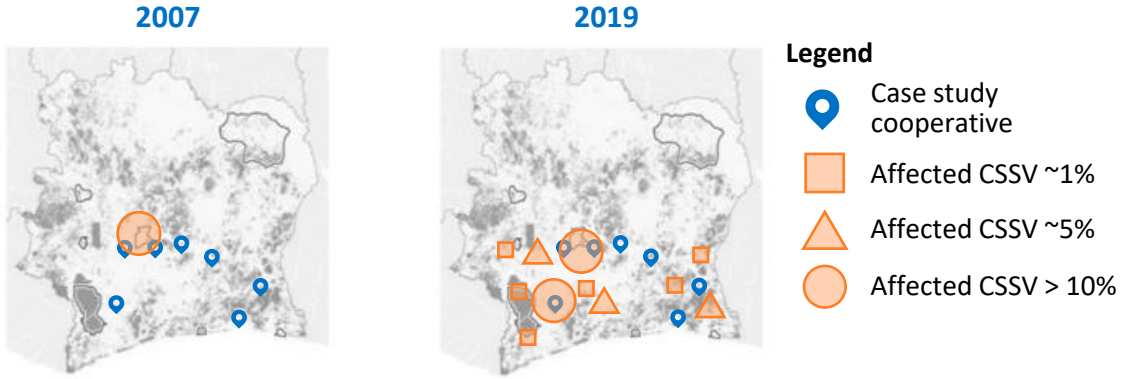
	Cocoa cycle	Land available	Perennial crops	Food crops	Swollen shoot
East	End 3rd	50%	Rubber & Palm	Rotation	Low
Center	Start 3rd	10%	Rubber & Palm	Rotation	High
West	End 1st / Start 2nd	< 1%	Rubber	None	Medium

Sources: 1) Läderach (2013); 3) Reuters (2018); 4) Nitidae (2020) Cocoa Diversification Assessment;

The Swollen shoot disease is a significant threat to the Ivorian cocoa industry with potential yield losses of up to 75% in two years on an infected plantation

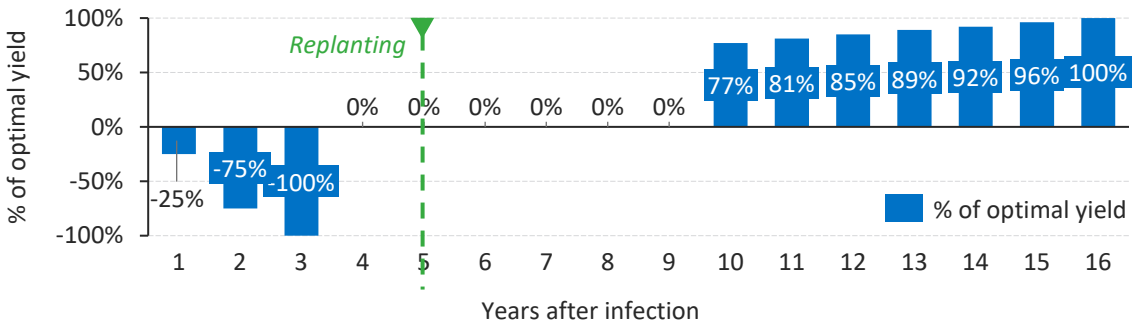
Swollen shoot started in central Ivory Coast and is spread to all cocoa cultivating areas

Area affected by CSSVD by 2007 and 2019 in Ivory Coast. [1), 2) & 14)]



Infected cocoa plants are able only able to increase their yield after 8 years.

Effects on cocoa-yield curve due to CSSVD in tree years and replanting after two (5th –year) in % change of optimal cocoa-yield curve. [8), 10)]



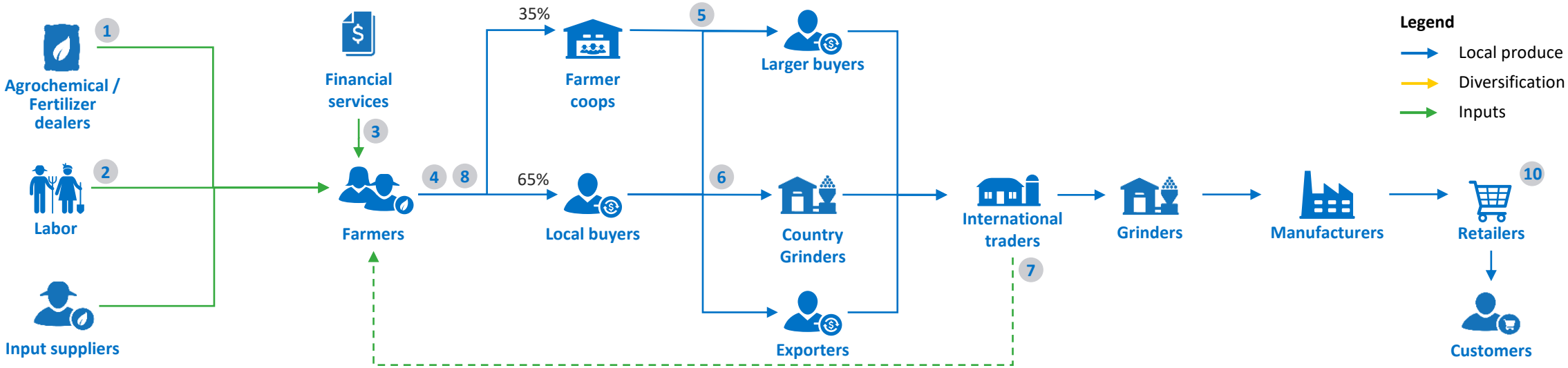
Sources: 1) Reuters (2018) 2) KIT (2018) 3) FAPAA (2018) 4) Bloomberg (2019) 5) WCF (2020) 6) CABI (2016) 7) Domfeh et al. (2016) 8) Guiraud et al. (2018) 9) Reay (2019) 11) Andres et al. (2016) 12) Kouakou et al. (2012); 14.) Nitidae (2020) Cocoa Diversified Assessment

Development of Cacao Swollen Shoot Virus Disease (CSSVD)

- **The CSSVD is spread by the mealybug through 'radial spread'**(bugs that move along interlocking branches of adjacent trees), or though '**jump spread**' (bugs that move along the wind). [11)]
- The disease appeared in **central Ivory Coast in 2006 and 2007** in the regions of Bouafle, Sinfra and Oumé, with **more than 70% of plantations in the region being infected** causing production on those plantations to **decrease by about 60% between 2009 and 2017**. [1)] Moreover, CSSV has spread severely in the south west of Ghana, spreading to the cocoa area in the south east of Ivory Coast. [4)]
- **Ghana and Ivory Coast join efforts** to control the spread of CSSVD by cutting down 780,000 Ha of cocoa trees. Ivory coast started a program in **2018 to cut down 100,000 Ha of infected area**. With the help of funding from the African Development Bank, the Ivorian government provides an **incentive to farmers with inputs and a premium per Ha of cut-down infected cocoa area**. [2) 3)] However, the follow-up of smallholders is **lagging, as they don't see the incentive as sufficient**. [13)]
- To stop the spread of CSSVD, all infected and surrounded trees of an infected farm should be **completely removed, without the attempt of rejuvenation of the old roots**. [6)]
- **Barrier crops can help isolate the farm and trap mealybugs**. [5)] **Citrus and oil palm** barriers are the most effective in protecting spread. [7)] **Coffee and rubber trees are also suggested** to be used as barriers; however, these **are known to have negative effects on the cocoa-yield** due to e.g., shade and the attraction of other cocoa damaging viruses or insects. Hence, a final option would be to use **insecticides, which increases the risk of soil degradation.** [11)]

← Back to Annex Overview

Limited access to inputs and finance hinder smallholders from applying good agricultural practices, performing diversification, and closing the living income gap



Inputs

1. Limited availability and affordability of fertilizer and agrochemicals hinder smallholders from using these inputs.
2. Labor availability and affordability is a challenge because of the availability of more lucrative jobs.
3. Farmers use informal finance to buy inputs. Due to a lack of collateral, farmers are not able to access formal finance.

Cultivation

4. Ivorian cocoa farmers typically sell their unprocessed cocoa beans to local buyers (65%) or farmer cooperatives (35%).
5. The local buyers and farmer cooperatives sell to larger buyers, processors and exporters, who sell to international traders.
6. The Ivorian government incentivizes the building of country processors by international traders.
7. Private sector multinationals provide marketing support and training to local buyers and cooperatives to improve efficiency and reduce marketing costs, while strengthening their supply chain.

Aggregation

8. The CCC sets a season fixed minimum farm-gate price.

Processing

9. Value is significantly unevenly distributed across the value chain: [3)]

	Farmer	Traders	Manu-facturing*	Taxes	Retailer
% share	7%	2%	43%	4%	44%

* Manufacturing includes grinding and transportation.

Sources: 1) KIT (2018); 3) The World Bank (2019)

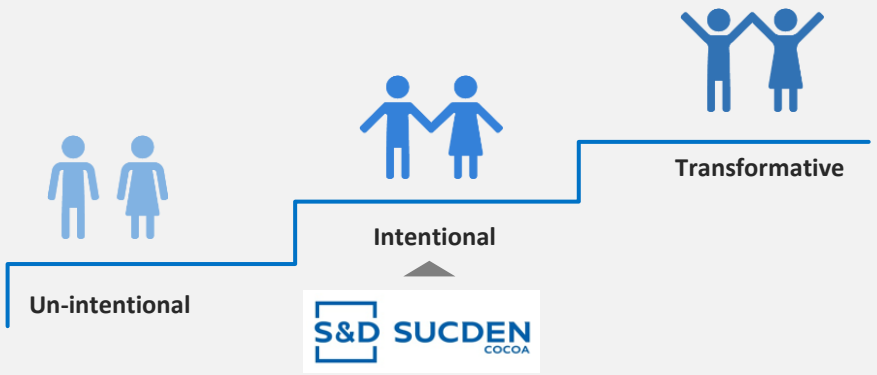
Sucden is considered gender intentional, and can improve its over all corporate gender strategy by documenting a gender strategy and collecting sex disaggregated data on farm-level

Gender Assessment

JOURNEY ON GENDER INTENTION LADDER

Gender Journey

See [annex] for explanation



Current situation

- Sucden is **gender intentional**. The company has taken steps to at least understand the different needs and constraints of women and men in its internal process with the goal of ensuring both women and men have access to resources.
- Although Sucden does not have a documented gender strategy in place, the company is looking to commission an external institution to **develop a comprehensive strategy which will include KPIs to track efforts made by Sucden**.
- Sucden maintains a **gender disaggregated farmer database** and seeks to **understand the unique needs and preferences of the male and female farmers** they work with.

Possible measures to be taken

INTERVENTIONS / KPIs

Best practices to implement in becoming transformative

- **Document the gender strategy** for clarity on goals and agenda. Establish KPIs (e.g., targets on the number of male and female farmers you are aiming to reach), develop a roadmap to get there and allocate resources to monitor and measure gender goals.
- Promote an **inclusive workplace** for staff by developing **comprehensive internal gender policies**, approved by the management, and ensuring that these are periodically disseminated to all staff.
- Use **sex disaggregated data collected to inform service delivery to farmers** e.g., track sex disaggregated farm level metrics such as yield and income to understand gaps and need for services and skills.
- **Inclusive tailoring of services** by identifying women's needs and preferences in view of training times and location to ensure their participation.

Potential KPIs to monitor on the gender journey

- Number of women benefitting from improved working conditions
- Number of women with reduced living wage gap
- Number of women with access to and control over income
- Increase in income for women
- Increase in the number of women accessing services

Sources: Gender module responses from Sucden

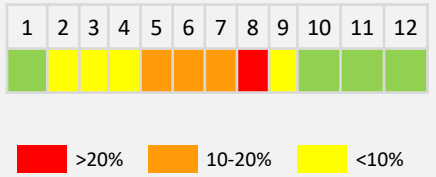
Cocoa farming households face food insecurity in the period before the main harvesting period, although Sucden aims to mitigate this risk by empowering women with nutrition training and access to finance

Climate risks exposure and impact

RISK EXPOSURE

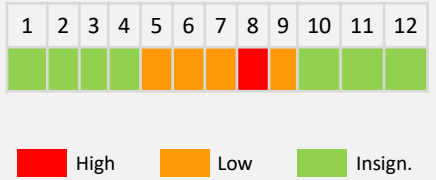
Food Access & Availability

Percent of farmers that expressed that they face food shortages during this month of the year. Farmers are most food insecure in Aug (just before harvesting starts)



Cash flow Stability & Access

Proportion of farmers that are cash-strapped during this month of the year. Farmers are most cash-strapped in Aug/Sept



FARMER RESILIENCE AND IMPACT

Farmer resilience

- In Ivory Coast, farmers earn significantly below the living income benchmark, limiting farmers' ability to secure food

Impact

- The number of undernourished people has grown from 3.5 million (2000-2002) to 5 million (2017-2019)
- In Ivory Coast, 35% of individuals living in rural settlements do not have access to clean drinking water. Disproportionately affecting woman, who are responsible for bringing water to their homes[6)]
- 32.1% of the population has access to at least basic sanitation services[7)]

Measures taken by Sucden

ADAPTATION MEASURES/POLICIES IN PLACE

Adaptation measures

- Sucden aims to further emphasize the work that they are doing on training nutrition champions and crop diversification
- In certain communities, Sucden aims to coaches 12 "nutrition champions" to raise awareness and train VSLA members on good nutritional practices to improve food security in the communities
- Over the past few years, Sucden has emphasized income diversification and an implementation of agroforestry / reforestation

CHALLENGES/ROOM FOR IMPROVEMENT

Challenges in implementation

- Limited data availability hampers the scaling of implementation of interventions, aimed at improving food security
- Farmer Organization representatives have limited knowledge on farm diversification and agroforestry
- Woman are involved with land preparation (19%), planting (31%), pod breaking (50%), and drying (18%) [1)], potentially leading to limited time availability of women to access training

Sources: 1) KIT (2018); 2) USAID (2018); 3) AFDB (2018) 4) World Bank (2017) 5) World Cocoa Foundation (2020) 6) The World Bank (2019)

Increase of temperature and frequency of climate extremes shift favourable cocoa cultivations areas from east to west Ivory Coast threatening cocoa production and yield without CC mitigation of adaption

Climate risks exposure and impact

RISK EXPOSURE

Temperatures (change in) short- and long-term averages	High	• The temperature is expected to increase by 1.6 – 2.9 C by 2050. [2) 3)]
Precipitation (change in) timeliness and availability	High	• With no change in total rain fall and decrease in rain days, the number of extreme rainy days is expected to increase. [2) 3)] • Rise of sea water of 17-45 cm by 2050. [3)]
Climate extremes (change in) likelihood and severity of hail, floods, etc.	High	• Increased frequency and intensity of heavy rainfall. [3)]

FARMER RESILIENCE AND IMPACT

Farmer resilience

- Farmers don't have enough income to make investments to mitigate/adapt to climate change.

Impact

- Increased crop losses from drought, floods, pests and disease, and inundation. [3)]
- Reduced water quality and availability, intensifying flood events, coastal inundation, and salinization will shorten growing season and affect yield. [3)]
- The Ivorian government foresees that the most of affected farmers will have to adapt to climate change, and that the farmers located in the middle of Ivory Coast will stop cultivating cocoa. [6)]

Measures taken by Sucden

ADAPTATION MEASURES/POLICIES IN PLACE

Adaptation measures

- Sucden currently works significantly on agroforestry, but sees strong opportunities to engage more meaningfully in regenerative agriculture.
- Sucden is doing projects to see how best to support farmers on becoming more resilient to climate change through agroforestry, climate smart cocoa training, income diversification, etc.
- Sucden incentivizes the cultivation of sustainable cocoa through the payment of a certification premium, of which at least 50% must go to the farmer.

CHALLENGES/ROOM FOR IMPROVEMENT

Challenges in implementation

- In Ivory Coast, only 10% of farmers are being paid digitally for their cocoa through a formal procurement system; the rest are paid in cash, upon delivery. [5)]
- Limited data availability hampers the scaling of implementation of interventions on climate change mitigation / adaptation, with most data collected focused on agroforestry and with too little on soil quality.
- Sucden sees added value in strengthening their segmentation approach to increase the effectiveness and efficiency of interventions around the mitigation and adaptation to climate change.

Sources: 1) KIT (2018); 2) USAID (2018); 3) AFDB (2018) 4) World Bank (2017) 5) World Cocoa Foundation (2020) 6) The World Bank (2019)

Despite the fact that many farmers' grow a number of crops besides cocoa to complement their income, the Ivorian cocoa farmer's household income remains significantly below the living income benchmark

Living Income Benchmark

The Living Income Benchmark is equivalent to the cost of living for a family.

Living Income

Cost of a decent standard of living for a family (specific to a time and place)

Living Income Gap

Living Income Gap

Other income

Off-farm income

Farm income

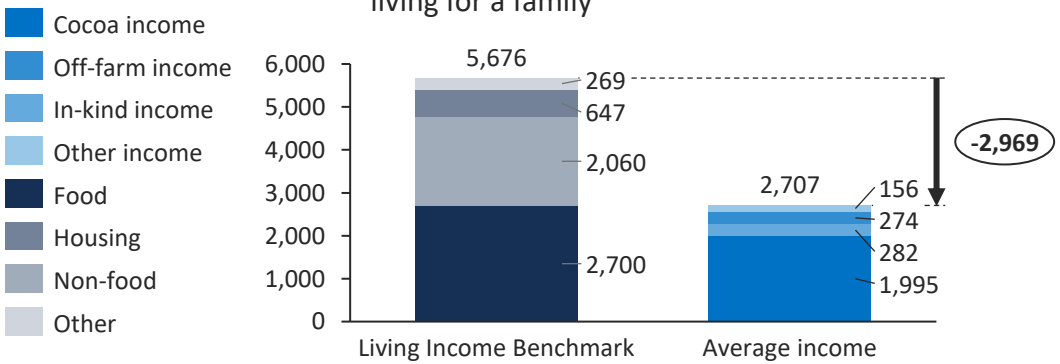
Home consumption

Actual income

To measure the Living Income Gap, **compare the living income benchmark with farmers' actual income** (earned by **all adult household members** from their own farming enterprise, as well as all other income sources).

- In Ivory Coast, the average household consists of 7 people, among which are 4 adults and 3 children. The average age of the household head is 45-50 years old. [2)]
- The average household income is USD 2,707 p/y (median USD 1,919 p/y) [1)], which is **significantly below the living income** of 5,676 USD p/y [6)], and **just above the extreme poverty** line of USD 2,276 p/y. [1)]

Earning a living income means that all income sources from a farming household are sufficient to afford a basic but decent cost of living for a family



- An average farmer in Ivory Coast has a **farm area of 6.7 Ha, of which 4.9 Ha is dedicated to the cultivation of cocoa.** The average tree density is 1,348 #/Ha [1)], and an average yield is 271 kg/Ha (Oct – Jan) and 82 kg/Ha (Apr – June). [2)]
- Contrarily to Cocoa, diversified crops are also used as food crop, and hence have a lower effect on a farmers' income and expenses. [2)]

Sources: 1) True Price (2018); 2) KIT (2018); 4) The World Bank (2019); 6) LiCoP/Anker (2020) 7) LiCoP/Anker (2018)

About the SDM

Understanding the SDM's strategy, business model and financial performance

Sucden is well-positioned to unlock high sustainability potential in the cocoa value chain in Ivory Coast by using its experience and coop network to secure an efficient increase in sustainable cocoa sourcing volume

Goals & Aspirations

Aspirations

- *Secured supply* – Sucden aspires to secure the supply of cocoa to its factories, and maintain the current and future need for its clients demand of conventional and sustainable cocoa.
- *Sustainable supply* – Sucden aspires to increase the sustainability of its sourced cocoa to align with its corporate values and clients' requirements.
- *Efficient supply* – Sucden aspires to ensure an efficient supply with the use of its existing infrastructure of warehouses, cooperatives and smallholders Sucden sources from.

Goals per 2025

- [redacted]
- Reach with the intervention 5,000 farmers of the total base of farmers from which Sucden directly sources cocoa

Where to Play

To secure cocoa supply,

- Sucden creates and maintains year-round relationships with farmers, through the cooperatives to which they belong, helping farmers to increase their income resilience by diversifying their farms and by enabling them to access banking services and finance.

To secure sustainable supply,

- Sucden sets up innovation strategies that fit the local environment, its farmer needs and technical feasibilities.
- Sucden supports smallholders to conserve the environment and resources by implementing reforestation and regenerative agricultural practices.
- Sucden advances its infrastructure with the capacity building of cooperatives.

To secure efficient supply,

- Sucden adapts agri-tech possibilities ranging from tech-driven management platforms, IT infrastructures, and farmer-cooperative communication models.

How to Win

Secure supply

- Revisit service offering and segmentation to/of farmers and cooperatives.
- Serve broader needs of farmers and cooperatives to capture business opportunities that go beyond cocoa.

Sustainable supply

- Closely and digitally monitor and evaluate the compliance of farmers and cooperatives to sustainable cocoa (certification) standards and policies.
- Build and advance the capacity of cooperatives within Sucden's sourcing network through incentivized graduation programs

Efficient supply

- Create new partnerships with local banks, off-takers, and input suppliers while showcasing the potential to transform the business.

Capabilities Required

Critical capacities

- **Knowledge and expertise** on smallholder service provision, to sustain productivity and mitigate risks driven by soil degradation and climate change;
- **Network and collaboration** with government (e.g., CCC) and other VCPs;
- **Network, pilot experience, and vision** on income diversification activities and continuous development to establish and tailor diversified service provision;
- **Knowledge and expertise** on capacity building of cooperatives, to increase professionalism, access to finance, and development of farmer training;
- **Ability to incentivize farmer behavior** to increase both coop and farmer loyalty;
- **Ability to provide digital and banking solutions** to farmers/cooperatives to increase traceability and sustainability;
- **Ability to model and analyze** the financial and environmental outputs of future interventions both on farm and at the cooperative level.

Sucden invests in the continuous tailoring of provided production and supporting services to adequately support smallholders in their transition towards sustainably increasing cocoa production

Overhead (management, HR, legal, utilities, etc.)

CORE BUSINESS
Insight into the core business activities of Sucden on quality, processing and sourcing.

Quality control

- Quality is checked by the coops and Sucden on moisture, mold, foreign matter, etc.
- [redacted]

Sourcing / Storage

- Sucden sources through 30 cooperatives with a revolving credit facility to facilitate procurement
- Transport of the cocoa from the farmer to Sucden is arranged by the cooperative, after cleaned pre-grinded cocoa is sold

SERVICES & SUPORTING ACTIVITIES
Overview of current service provided to Sucden's farmer base

Certification (audits)	Deforestation / Agroforestry	Farmer Coaching / Farmer Field Schools	Child Labor Monitoring Remediation System	Traceability / Digitizing
▪ Sucden commissions consultants to support FOs in complying to UTZ/RA certification standards ▪ FOs receive 60 CFA/kg premium of which 50% must be paid to certified farmers	▪ Sourcemap alerts and helps Sucden to avoid sourcing cocoa from farmers in deforestation risk areas ▪ Sucden distributes shade-trees for reforestation and implementation of agroforestry on farms, with a payment for environmental services for tree survival ▪ Sucden supports some eligible farmers to acquire land certificates	▪ Sucden trains and assists farmers on GAPs, climate-smart agriculture, and agroforestry practices, by holding group sessions on FFSs, by individual coaching of farmers, and by establishing demo plots	▪ CLMRS has unannounced farmer visits by CLMRS agents to detect child labor. Agents report to a manager from the FO and officer from Sucden. ▪ Detected child labor is treated with remediation activities	▪ Sucden aims to establish a platform to pay FOs (and farmers) with mobile money ▪ This platform allows cert. premium to be tracked and, combined with Sourcemap, to trace cocoa from farmer to shipment

Gender Empowerment

- Sucden supports and monitors 12 VSLAs, who provide women with access to loans, builds the financial and entrepreneurial capabilities of 360 women via collective training and tailored coaching services, and supports the set-up of Income Generating Activities
- Sucden coaches 12 "champions" to raise awareness and train VSLA members on good nutritional practices

Profit margin

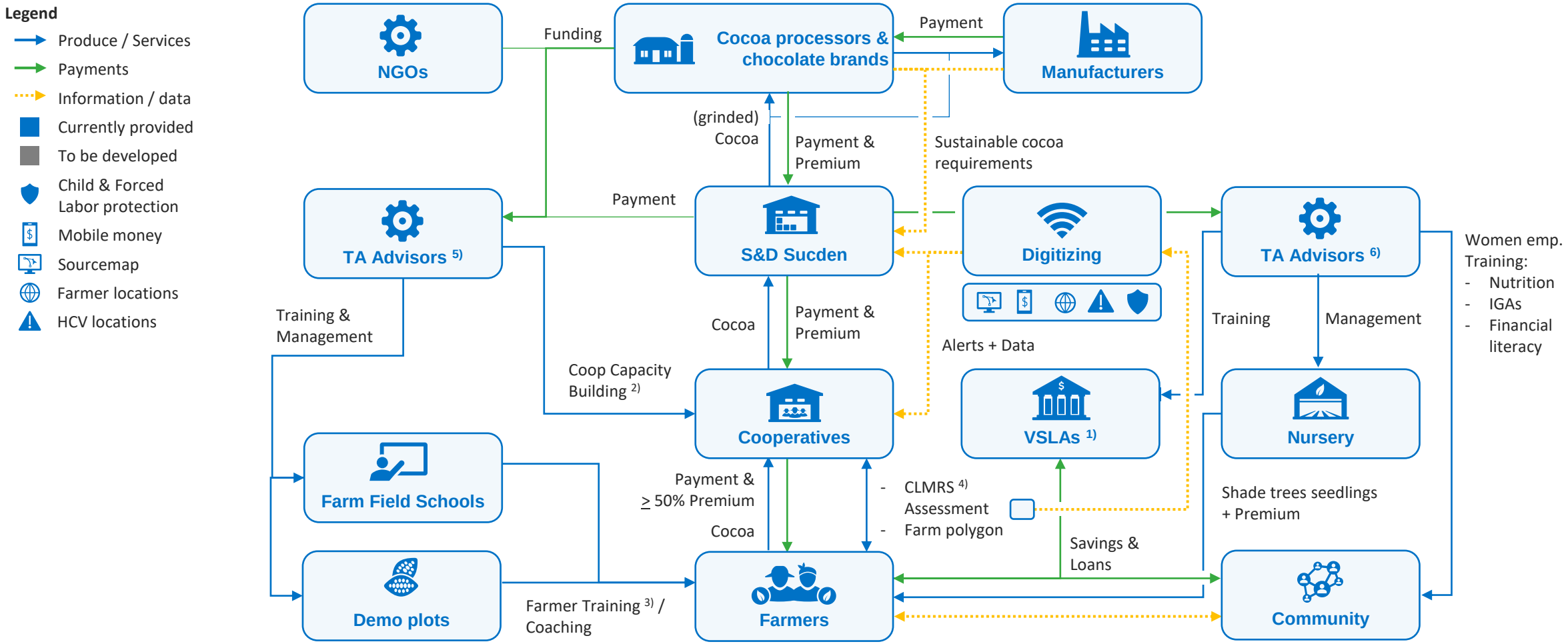
Sucden operates with different stakeholders in its ecosystem, indicating the need to ensure Sucden's service offering is adequately aligned with these stakeholders, considering numerous trade-offs

Actor	Organizations	Function (within this SDM)	Revenue model (within this SDM)	Incentive to participate (within this SDM)
Operator (Exporter)	• S&D Sucden	• Value chain investor; • Sources and processes cocoa beans and exports cocoa liquor, butter and powder products.	• Margin on cocoa sales	• Increase and secure sustainable cocoa supply, by achieving sustainability goals, transforming the sector, accelerating progress, and contributing to the alleviation of poverty in rural communities.
Cocoa processors and chocolate brands	• Classified	• Value chain investor; • Sources and processes cocoa beans and exports cocoa liquor, butter and powder products.	• Margin on cocoa sales	
Project Leads	• IDH • Solidaridad • AgroExpertises • FOA • Espoir+ • CFGAD	• Accelerates and scales sustainable trade by building impact-oriented coalitions; • Develops business solutions to poverty by linking people to information, capital, and markets; • Promotes child protection and women's empowerment in cocoa producing regions of Ivory Coast.	• None • Consulting fee	• Increase experience of conducting business with smallholders and cooperatives. • Bring into practice the results of research
Financial Service Providers	• International Finance Corporation (IFC) • FCIP/Farmfit Fund	• Blends investment with advice and resource mobilization to help the private sector advance development.	• Payment of interest by cooperatives and Sucden, and farmer in long-term.	• Attract new agri-customers • Increase experience of conducting business with smallholders and cooperatives. • Capture savings made by smallholder farmers, and increase farmers access to banks services and products

Sucden operates with different stakeholders in its ecosystem, indicating the need to ensure Sucden's service offering is adequately alignment with multiple potentially conflicting interests

Actor	Organizations	Function (within this SDM)	Revenue model (within this SDM)	Incentive to participate (within this SDM)
Cooperatives	N/a	• Farmer cooperative • Supplies members with services and agro inputs to improve farmer productivity and livelihoods	• Margin on cocoa, input and diversified crop sales.	• Increase and secure sustainable cocoa supply. • Receive training and build management capacity, increase access to finance and woman empowerment.
Government	Conseil du Café-Cocoa	• Governmental organization • Contributes to regulation, stabilization and development of the coffee and cocoa sector in Côte d'Ivoire	• Tax on cocoa sales	• Catalyzes the development of the cocoa value chain in Ivory Coast • Promote a diversified economic model for new generation farmers
Research Institutes	• SCOPEinsights • PUR Project • Agrilogic	• Research institute to assess the possibility of implementing community-based reforestation and agroforestry, diversification and coop-capacity building initiatives.	• None • Consulting fee	• Increase experience of conducting business with smallholders and cooperatives. • Bring into practice the results of research

The SDM is structured in the following way



NOTES: 1) Village Saving and Loan Associations; 2) Cooperative's capacity is build on: RA's new Cocoa Assurance Plan and Professionality; 3) A limited group of farmers receive coaching with a Farm Development Plans, off all farmers 80% are trained on: Good Agricultural Practices (GAPs), Climate Smart Agriculture (CSA), agroforestry, New Forest Code; 4) Child Labor Monitoring and Remediation System; 5) Solidaridad; 6) International Cocoa Initiative, Foncier-Foresterie-Agriculture, Fraternités Sans Limites, and Espoir+

Annex | About the SDM | Service provision related cost

This information is only available in the private version of the report

About the Cooperatives

Understanding the Cooperatives' level of professionality, business model and financial performance

Cooperatives express their willingness to invest and increase the sales of sustainable cocoa, but are hindered by limited transportation, access to finance, and off take of sustainable cocoa

Sustainable cocoa is available, but insufficient logistical capacity and potential lack of demand hinder the cooperatives from selling the total available volumes

Cooperatives are aware of the dynamics at the farm level through their delegates, who are the main contact people for member farmers.

Cooperatives leverage Sucden's projects and initiate their own small-scale projects with the money received as certification premiums

Access to finance/credit for school-fees is managed through the delegates, mitigating the risk of default but also decreasing visibility on farmer's cashflows and behaviour

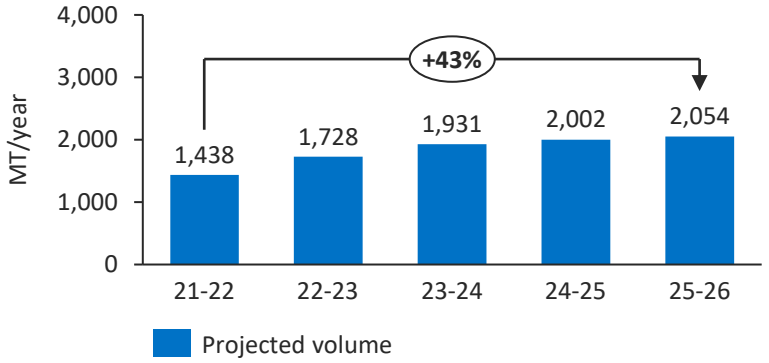
Digitalization (mobile money, bank-accounts, etc.) has potential, but lacks adoption, hampering the development of access to (pre-) finance.

Catch-22 of the cocoa market, potentially, to be solved by strong internal management at the cooperative level, cocoa traceability, and supporting access to high quality inputs through the provision of credit

The proposed decentralization approach would put cooperative A in significant financial distress, although sourcing volumes of cocoa would increase by 43%

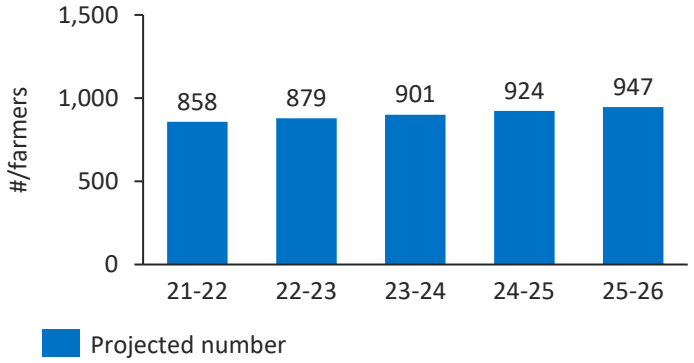
Sourcing volume

MT/year sourced by cooperative



Development of # farmers

Projected number of farmers



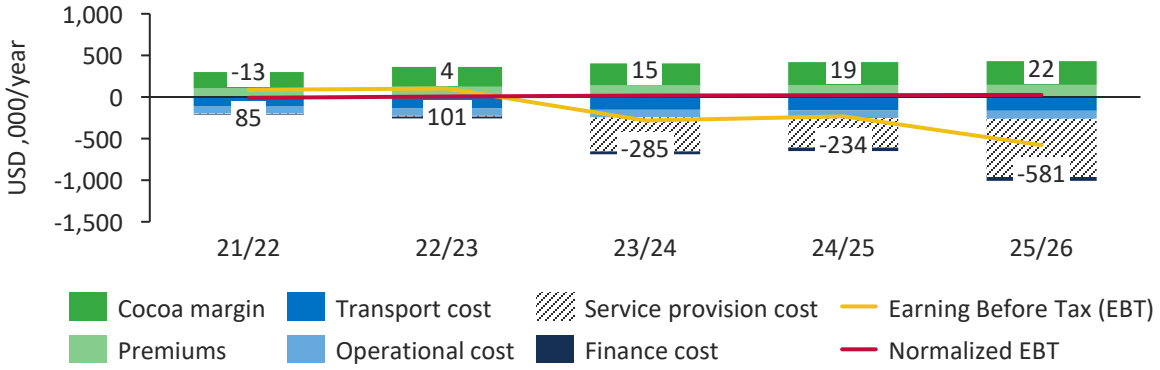
Geographical location

Location of FOs scoped for this SDM analysis

This information is only available in the private version of the report

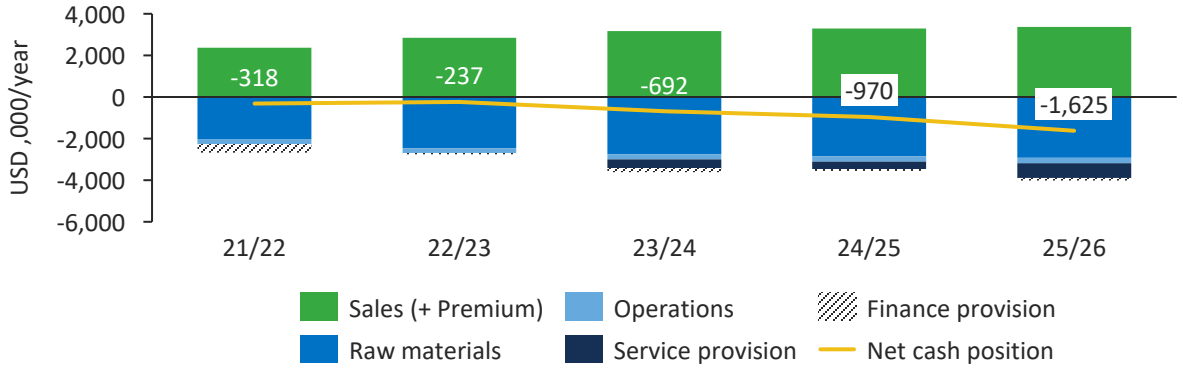
Annual return [1)]

Earning Before Tax in USD ,000/year [2), 3)]



Annual cash flows

Cashflows in USD ,000/month

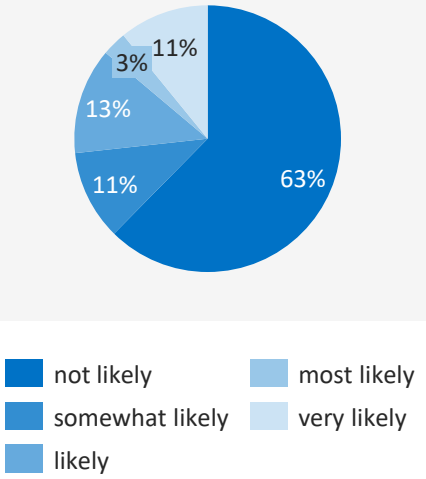


NOTE: 1) Figures are projections of assumptions, see [Coop segmentation], [Coop key variables], [Coop assumptions], and [Decentralization approach]; 2) Cocoa margin is sales price minus procurement of raw materials, Premiums are net earnings from premiums; 3) Normalized EBT is Earning Before Tax excluding premiums, finance cost, and service provision

To better manage its farmer base, cooperative A should improve its relationship management with its member farmers and the quality of services it offers, while providing access to inputs on credit

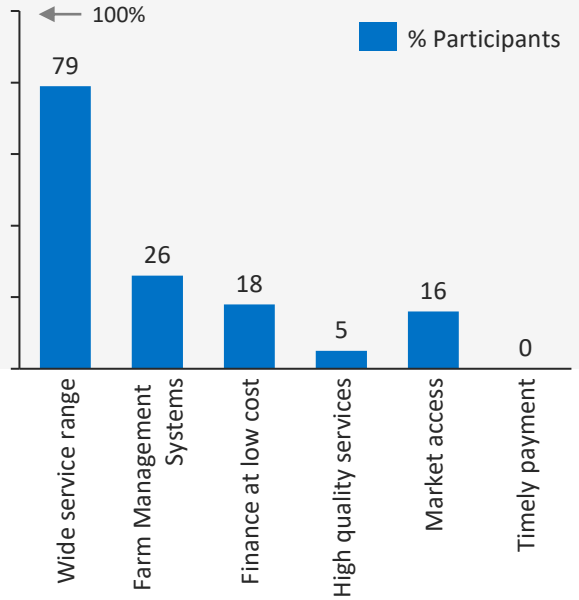
Recommendation from farmers

How likely is it that you would recommend the coop to a friend/peer?



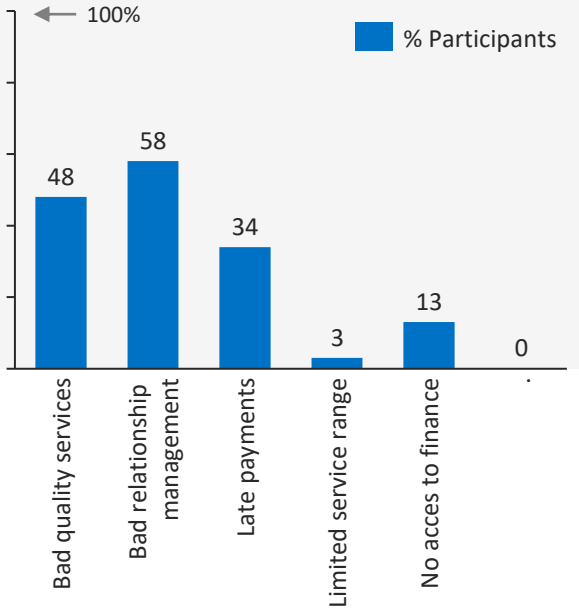
Reason for positive feedback

Why would you recommend using the services of the cooperative?



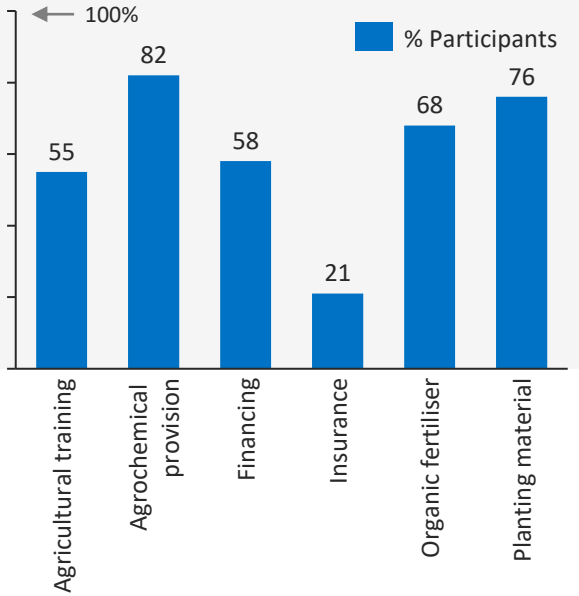
Reason for negative feedback

Why would you <u>not</u> recommend using the services of the cooperative?



Service needs [1)]

What services would you like to receive from the cooperative in the future?



- Farmers cooperative A works with are not likely to recommend the cooperative to other peers, mainly driven by bad relationship management and a low quality of services;
- Additional service of interest are high quality inputs, finance, and seedlings

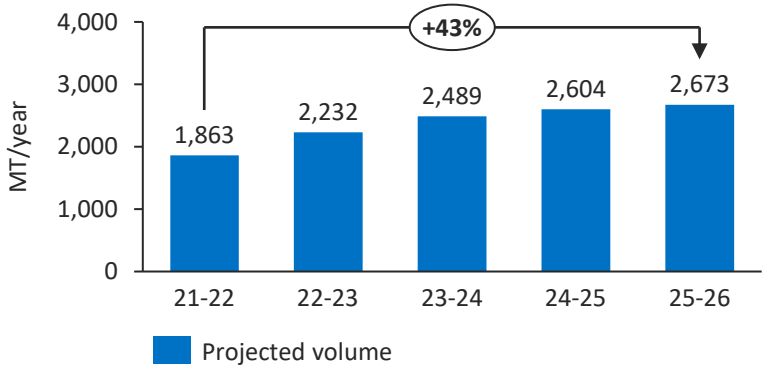
- Farmers who would recommend cooperative A to others are satisfied with the wide range of services offered by cooperative A and the access to the cocoa market the cooperative provides

NOTE: 1) Participants are able to provide multiple answers. % participants of each services in an indication of how many of the surveyed selected that service ***(n = 38)***

The proposed decentralization approach would put cooperative B in significant financial distress, although sourcing volumes of cocoa would increase by 43%

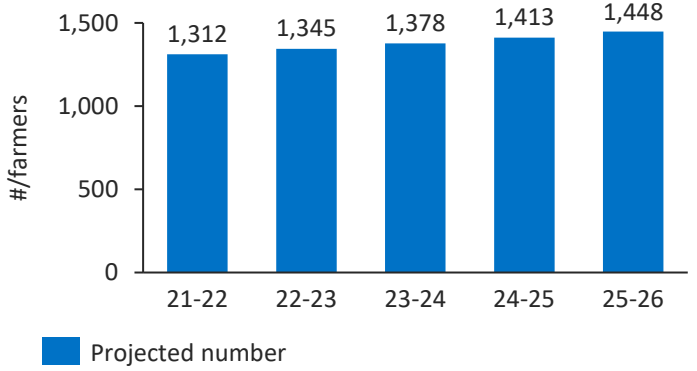
Sourcing volume

MT/year sourced by cooperative



Development of # farmers

Projected number of farmers



Geographical location

Location of FOs scoped for this SDM analysis

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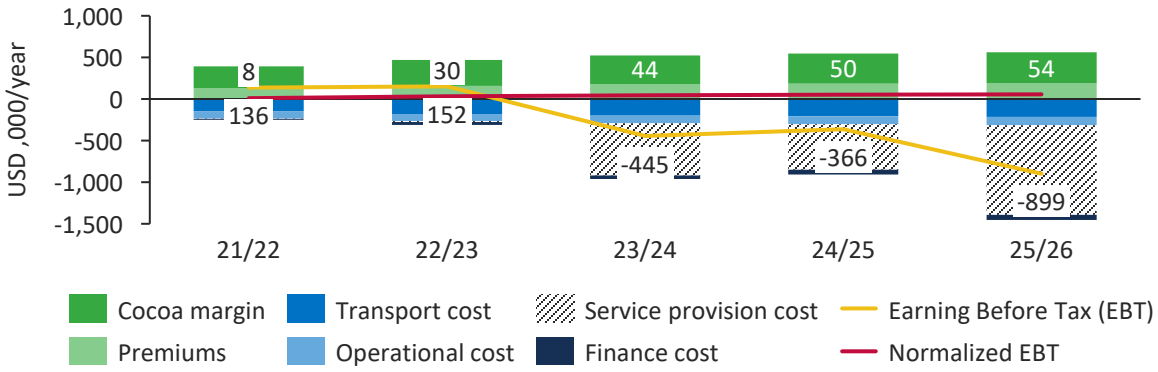
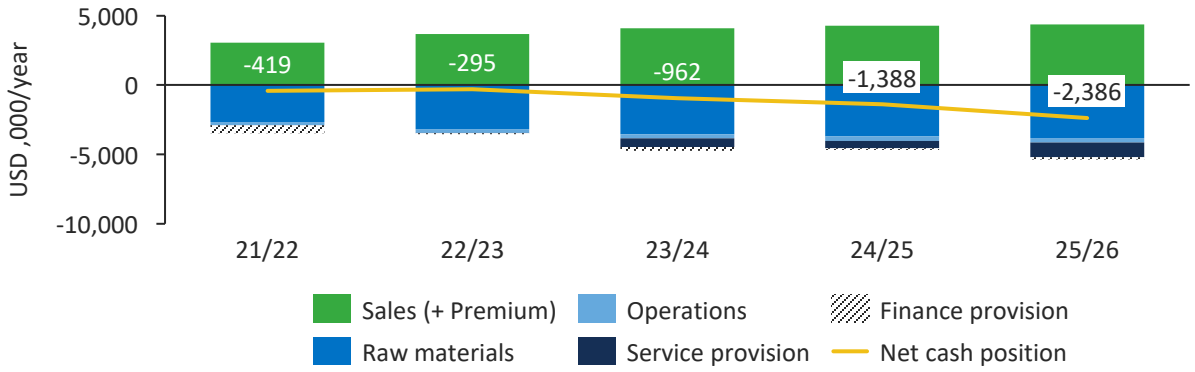
Annual return [1)]

Earning Before Tax in USD ,000/year [2), 3)]



Annual cash flows

Cashflows in USD ,000/month

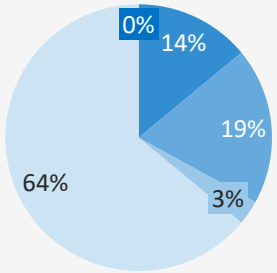


NOTE: 1) Figures are projections of assumptions, see [Coop segmentation], [Coop key variables], [Coop assumptions], and [Decentralization approach]; 2) Cocoa margin is sales price minus procurement of raw materials, Premiums are net earnings from premiums; 3) Normalized EBT is Earning Before Tax excluding premiums, finance cost, and service provision

Cooperative B has a good relationship with its farmer base. It can further tailor service provision to include financial services to support farmers' access to high quality input and shade tree seedlings

Recommendation from farmers

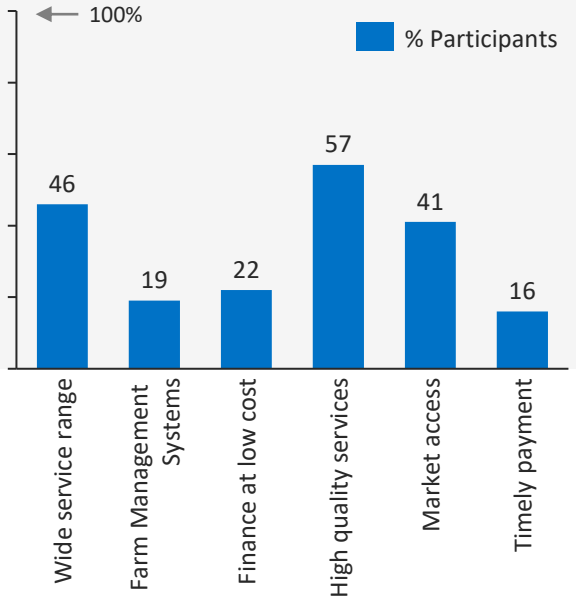
How likely is it that you would recommend the coop to a friend/peer?



not likely
somewhat likely
likely
most likely
very likely

Reason for positive feedback

Why would you recommend using the services of the cooperative?



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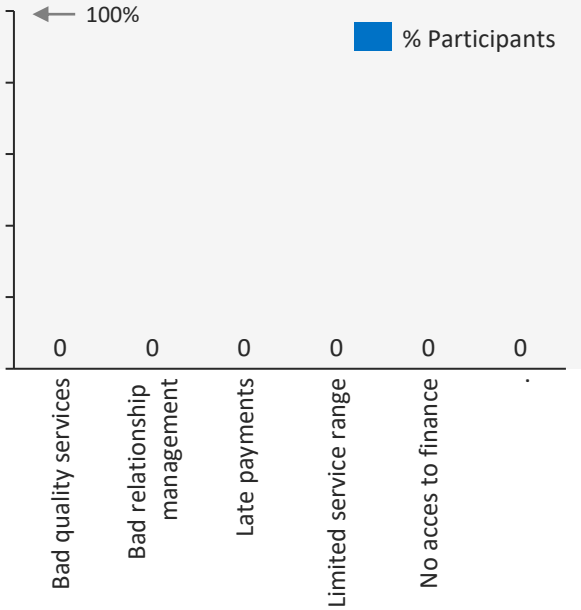
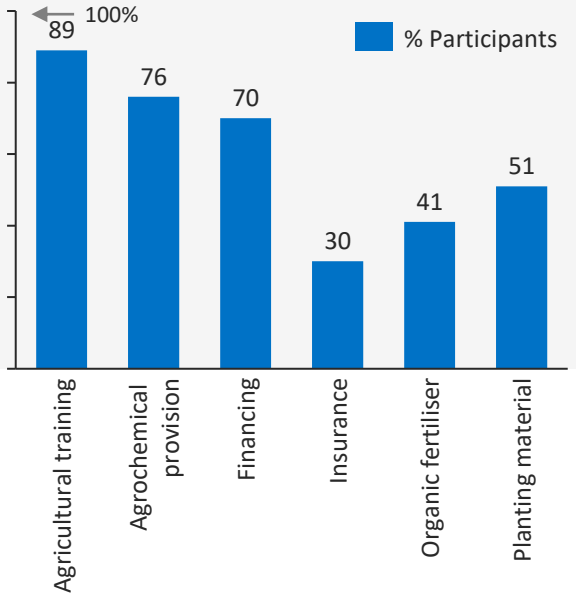


Service needs [1)]

What services would you like to receive from the cooperative in the future?



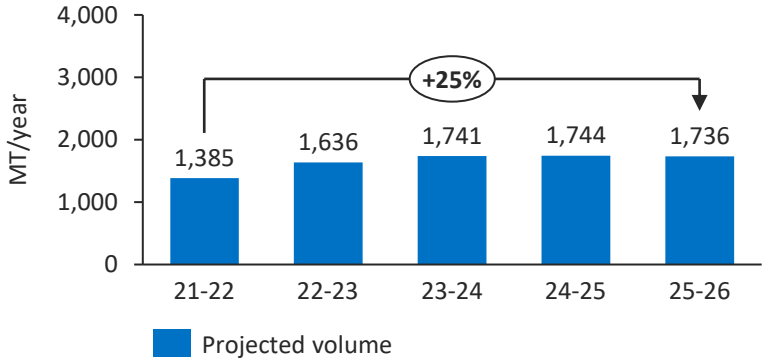
- Farmers cooperative B works with are very likely to recommend the cooperative to other peers, mainly driven by high quality services and the access to the cocoa market the cooperative provides
- Additional service of interest are agricultural training, high quality inputs, finance, and seedlings

NOTE: 1) Participants are able to provide multiple answers. % participants of each services in an indication of how many of the surveyed selected that service ***(n = 37)***

The proposed decentralization approach would put cooperative C in significant financial distress, although sourcing volumes of cocoa would increase by 25%

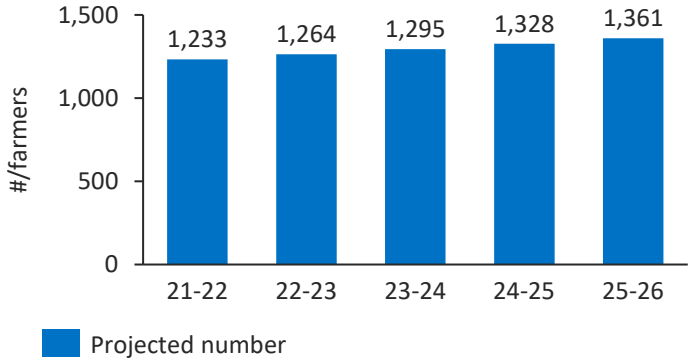
Sourcing volume

MT/year sourced by cooperative



Development of # farmers

Projected number of farmers



Geographical location

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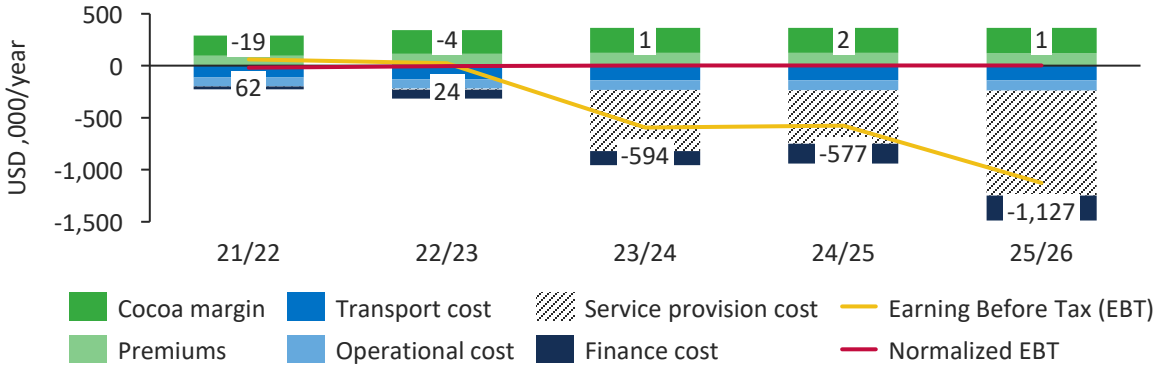
This information is only available in the private version of the report

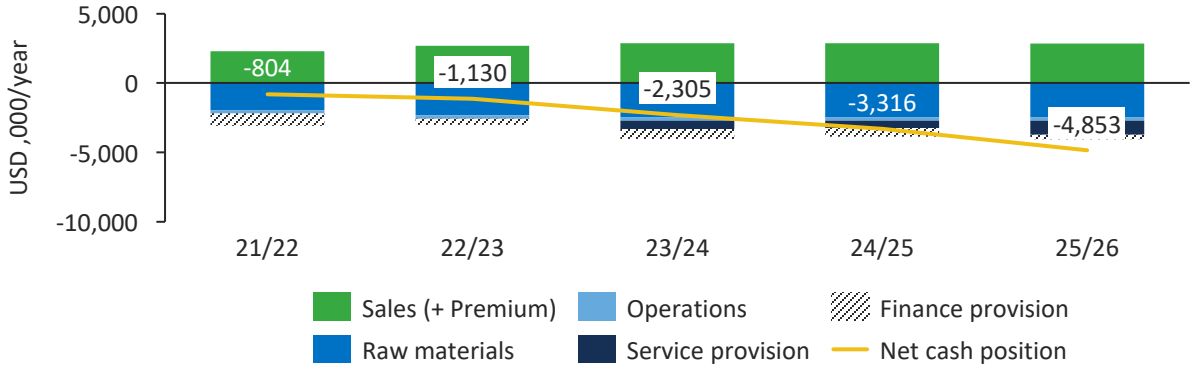
Annual return [1)]

Earning Before Tax in USD ,000/year [2), 3)]



Annual cash flows

Cashflows in USD ,000/month



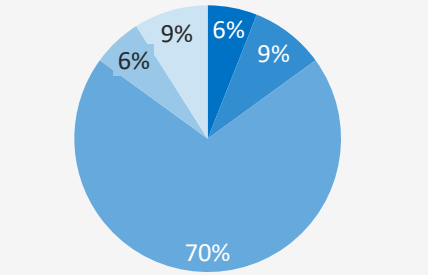
NOTE: 1) Figures are projections of assumptions, see [Coop segmentation], [Coop key variables], [Coop assumptions], and [Decentralization approach]; 2) Cocoa margin is sales price minus procurement of raw materials, Premiums are net earnings from premiums; 3) Normalized EBT is Earning Before Tax excluding premiums, finance cost, and service provision

Annex | About the Cooperative | Cooperative C

Farmers are likely to recommend cooperative C to peers, mainly driven by high quality service provision. Loyalty to the cooperative can be strengthened by supporting farmers' access to finance and inputs

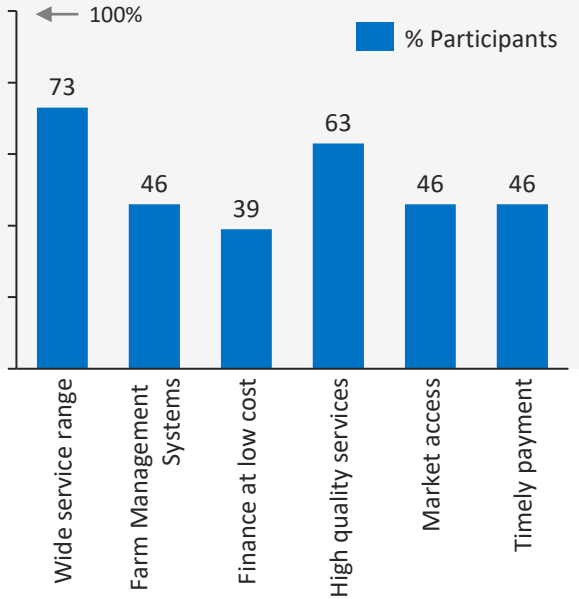
Recommendation from farmers

How likely is it that you would recommend the coop to a friend/peer?



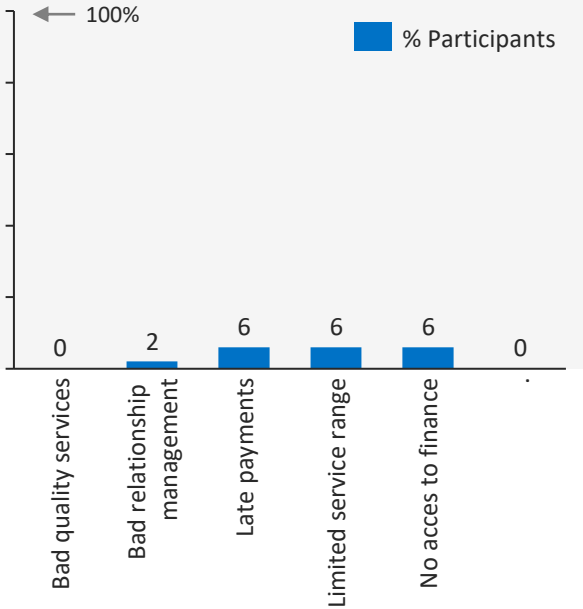
Reason for positive feedback

Why would you recommend using the services of the cooperative?



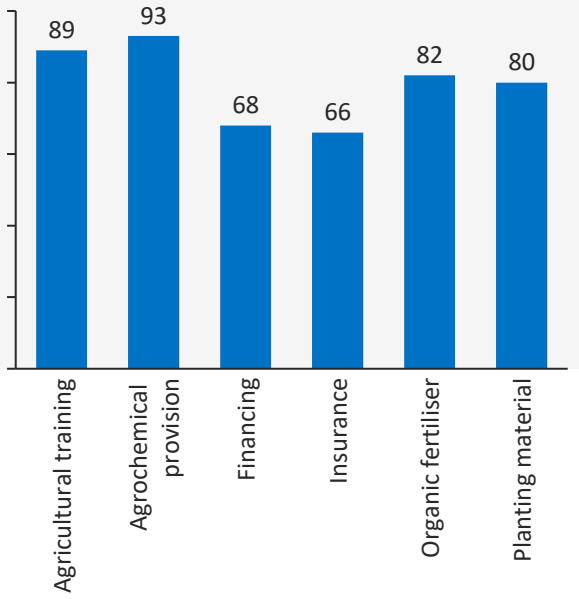
Reason for negative feedback

Why would you not recommend using the services of the cooperative?



Service needs [1)]

What services would you like to receive from the cooperative in the future?



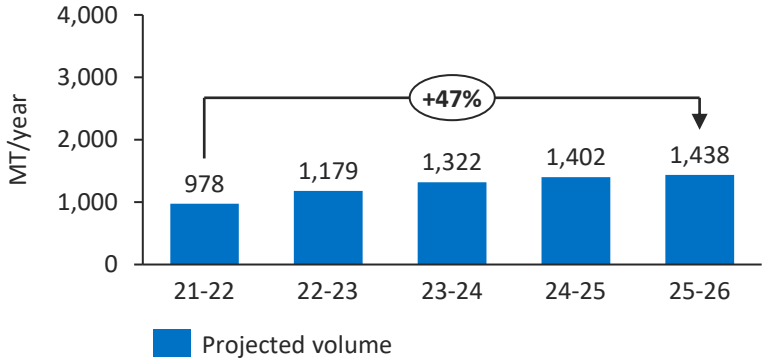
- Farmers cooperative C works with are likely to recommend the cooperative to other peers, mainly driven by a wide range of high quality services and the access to the cocoa market the cooperative provides
- Additional service of interest are agricultural training, high quality inputs, finance, and seedlings

NOTE: 1) Participants are able to provide multiple answers. % participants of each services in an indication of how many of the surveyed selected that service ***(n = 56)***

The proposed decentralization approach would put cooperative D in significant financial distress, although sourcing volumes of cocoa would increase by 47%

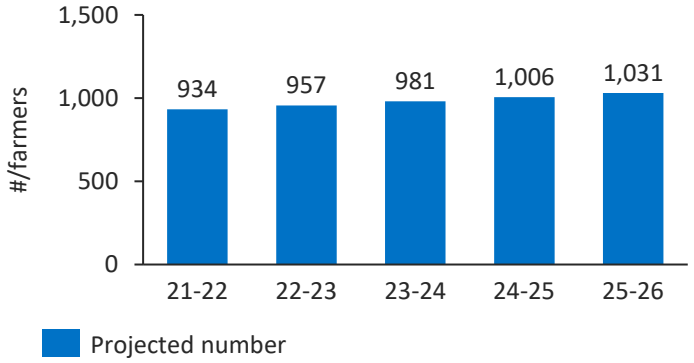
Sourcing volume

MT/year sourced by cooperative



Development of # farmers

Projected number of farmers



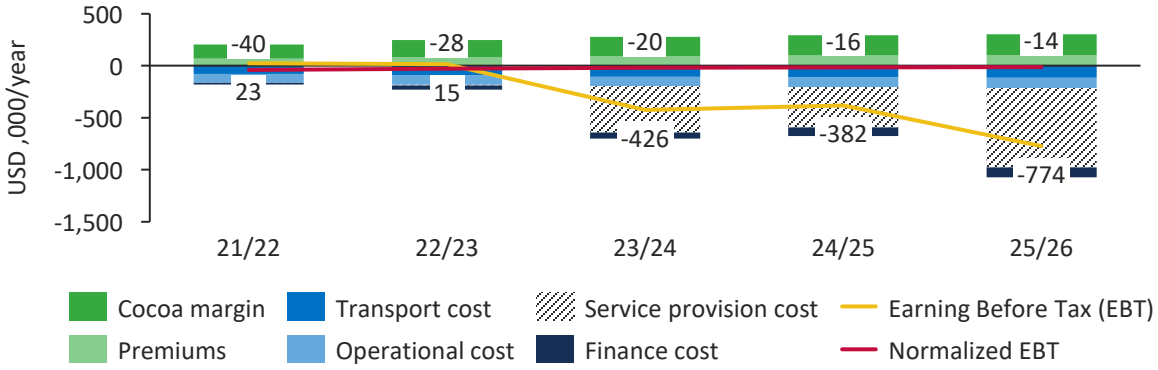
Geographical location

Location of FOs scoped for this SDM analysis

This information is only available in the private version of the report

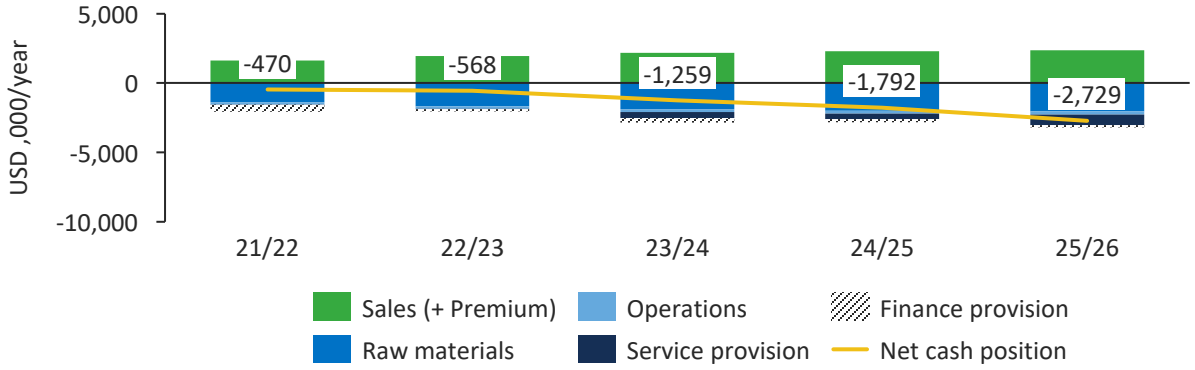
Annual return [1)]

Earning Before Tax in USD ,000/year [2), 3)]



Annual cash flows

Cashflows in USD ,000/month

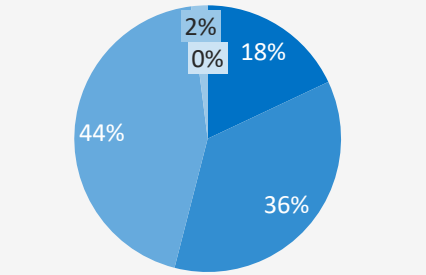


NOTE: 1) Figures are projections of assumptions, see [Coop segmentation], [Coop key variables], [Coop assumptions], and [Decentralization approach]; 2) Cocoa margin is sales price minus procurement of raw materials, Premiums are net earnings from premiums; 3) Normalized EBT is Earning Before Tax excluding premiums, finance cost, and service provision

Providing a wider range of services that include finance to create access to high quality inputs will ensure cooperative D can keep up the good relation with their farmer base

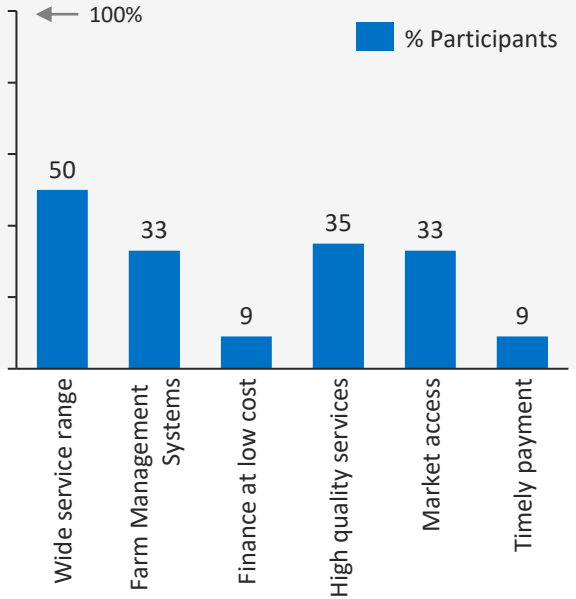
Recommendation from farmers

How likely is it that you would recommend the coop to a friend/peer?



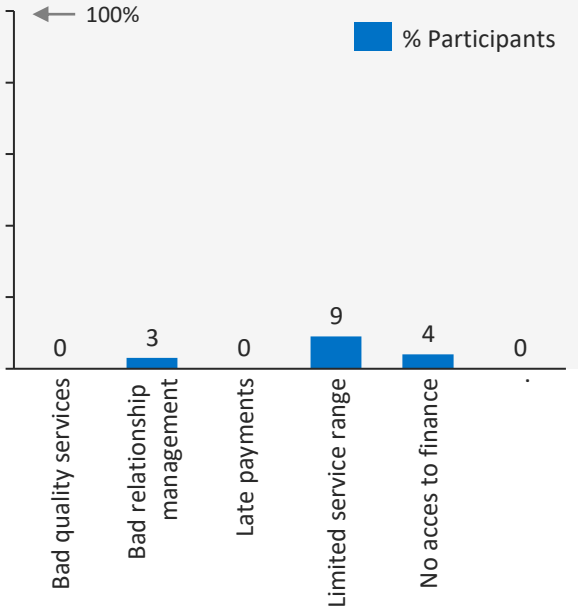
Reason for positive feedback

Why would you recommend using the services of the cooperative?



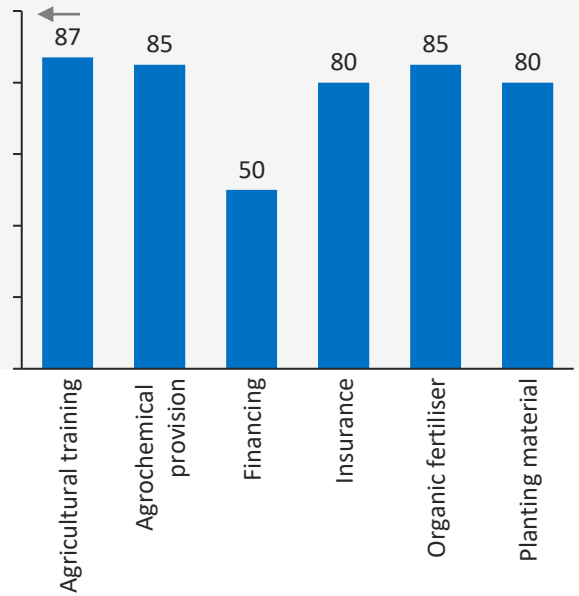
Reason for negative feedback

Why would you not recommend using the services of the cooperative?



Service needs [1)]

What services would you like to receive from the cooperative in the future?



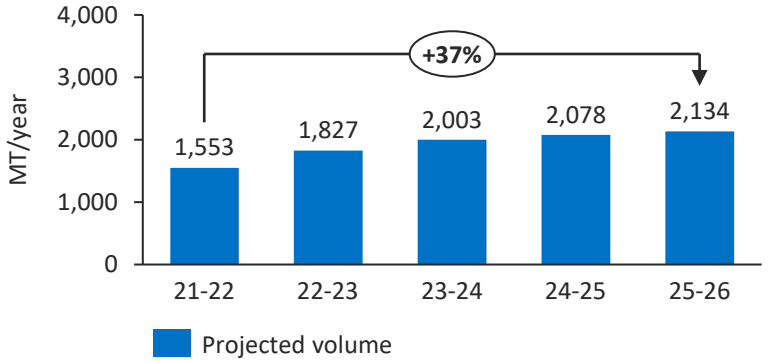
- Farmers cooperative D works with are somewhat likely to recommend the cooperative to other peers, mainly driven by a wide range of high quality services and the access to the cocoa market the cooperative provides, but farmers would value a wider range of services with finance
- Additional service of interest are agricultural training, high quality inputs, finance, and seedlings

NOTE: 1) Participants are able to provide multiple answers. % participants of each services in an indication of how many of the surveyed selected that service ***(n = 46)***

The proposed decentralization approach would put cooperative E in significant financial distress, although sourcing volumes of cocoa would increase by 37%

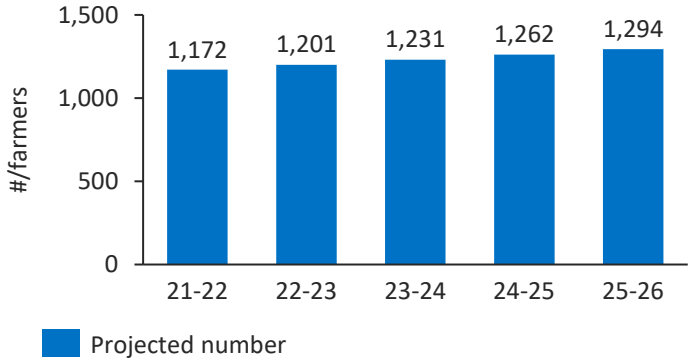
Sourcing volume

MT/year sourced by cooperative



Development of # farmers

Projected number of farmers



Geographical location

Location of FOs scoped for this SDM analysis

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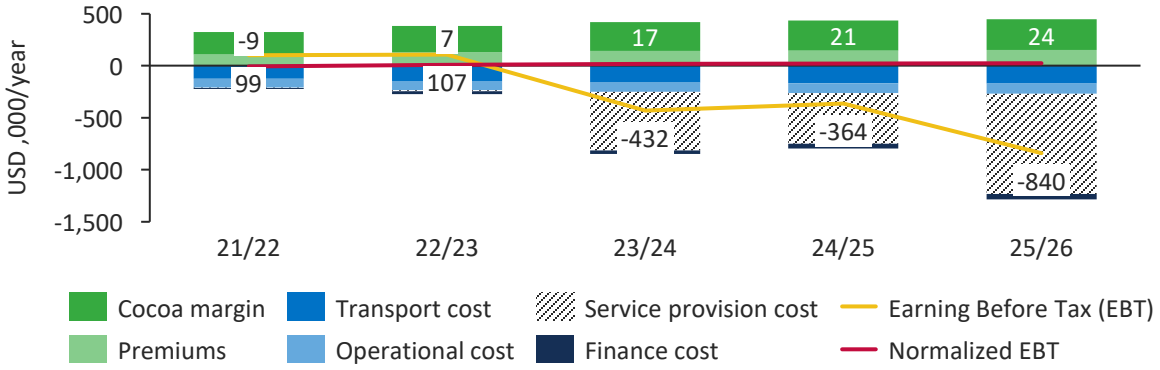
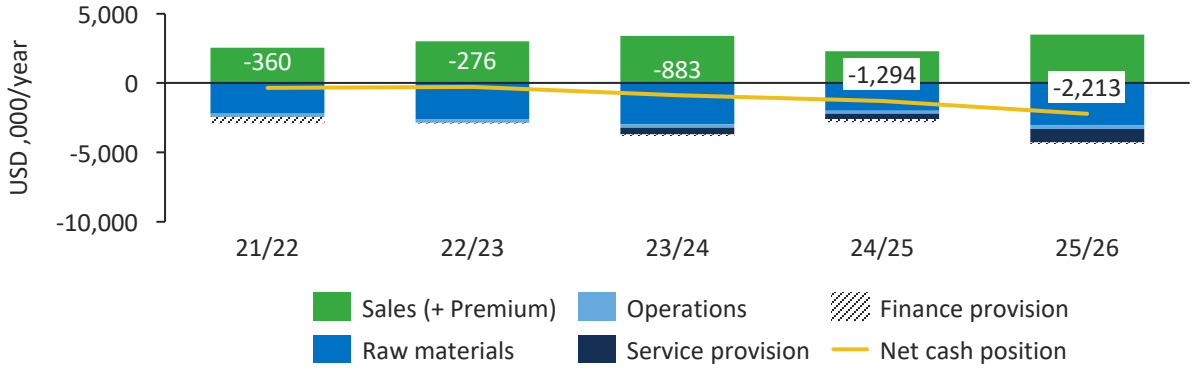
Annual return [1)]

Earning Before Tax in USD ,000/year [2), 3)]



Annual cash flows

Cashflows in USD ,000/month

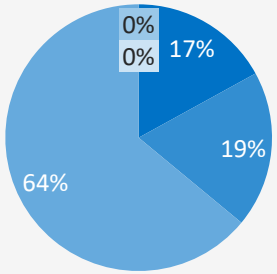


NOTE: 1) Figures are projections of assumptions, see [Coop segmentation], [Coop key variables], [Coop assumptions], and [Decentralization approach]; 2) Cocoa margin is sales price minus procurement of raw materials, Premiums are net earnings from premiums; 3) Normalized EBT is Earning Before Tax excluding premiums, finance cost, and service provision

Cooperative E has a satisfied farmer base and can strengthen its relationship with member farmers by providing finance to support farmer's access to high quality inputs

Recommendation from farmers

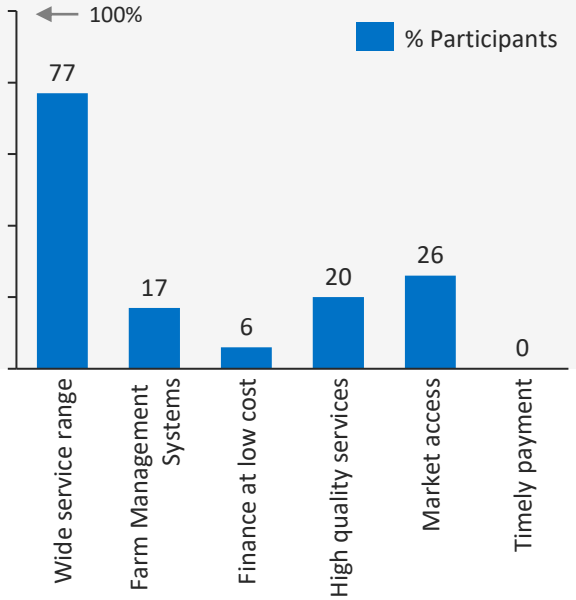
How likely is it that you would recommend the coop to a friend/peer?



not likely
somewhat likely
likely
most likely
very likely

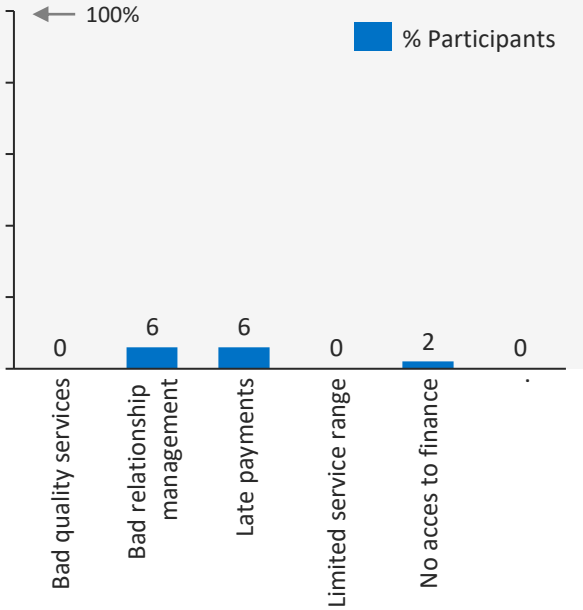
Reason for positive feedback

Why would you recommend using the services of the cooperative?



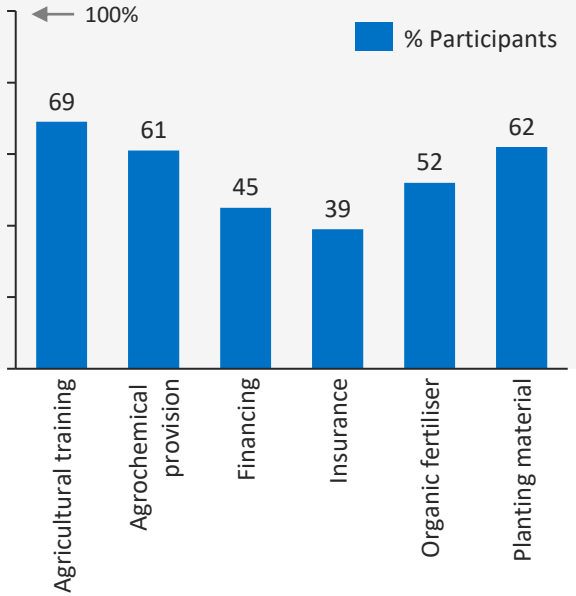
Reason for negative feedback

Why would you not recommend using the services of the cooperative?



Service needs [1)]

What services would you like to receive from the cooperative in the future?



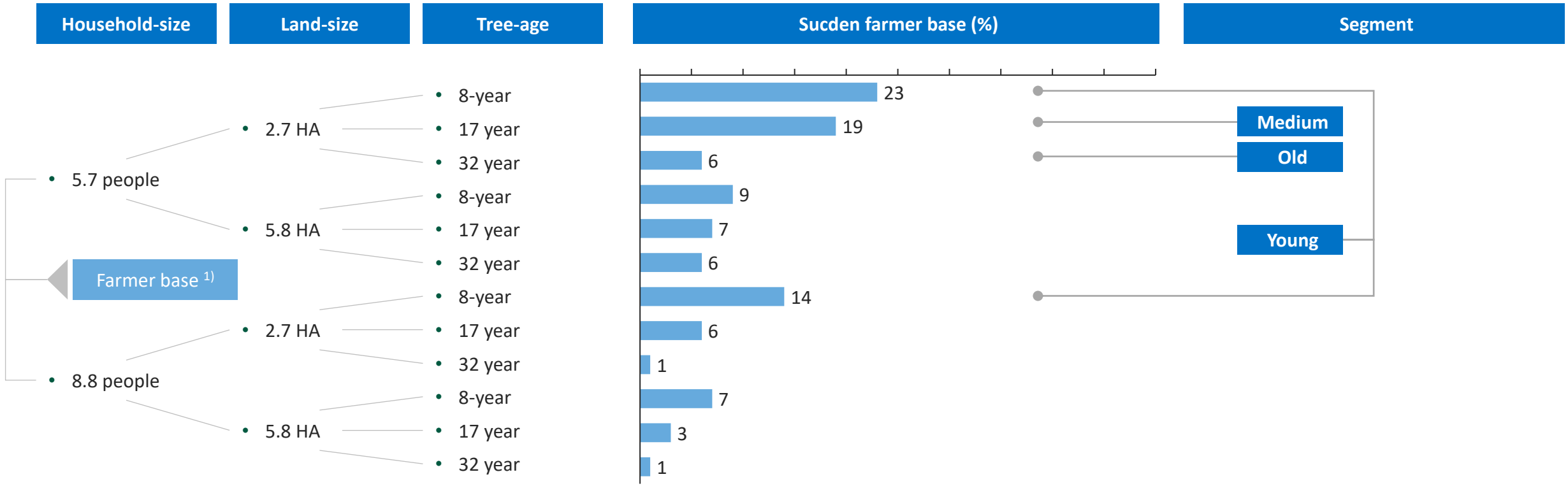
- Farmers cooperative E works with are likely to recommend the cooperative to other peers, mainly driven by a wide range of high quality services and the access to the cocoa market the cooperative provides
- Additional service of interest are agricultural training, high quality inputs, finance, and seedlings

NOTE: 1) Participants are able to provide multiple answers. % participants of each services in an indication of how many of the surveyed selected that service ***(n = 66)***

About the farmers

Assessing farmer impact and opportunities for improvement

Sucden farmer base is to be segmented into three segments based on household size, land-size, and tree-age. This has been determined, based on 62% of the farmer base analyzed for the SDM.



Young

- The above farmer distribution analysis shows **three different farmer segments**, Sucden currently sources from through its cooperatives

NOTE: 1) Farmer base distribution is established from Primary Data Collecting data collected by Akvo (2022), ***n: 157***

Young

- Farmer segment, representing 37% of Sucden's farmer base, with households of on average 6 to 9 people, a total land-size of 2.7 Ha, and trees that are 8 years on average, see [here] all details

Medium

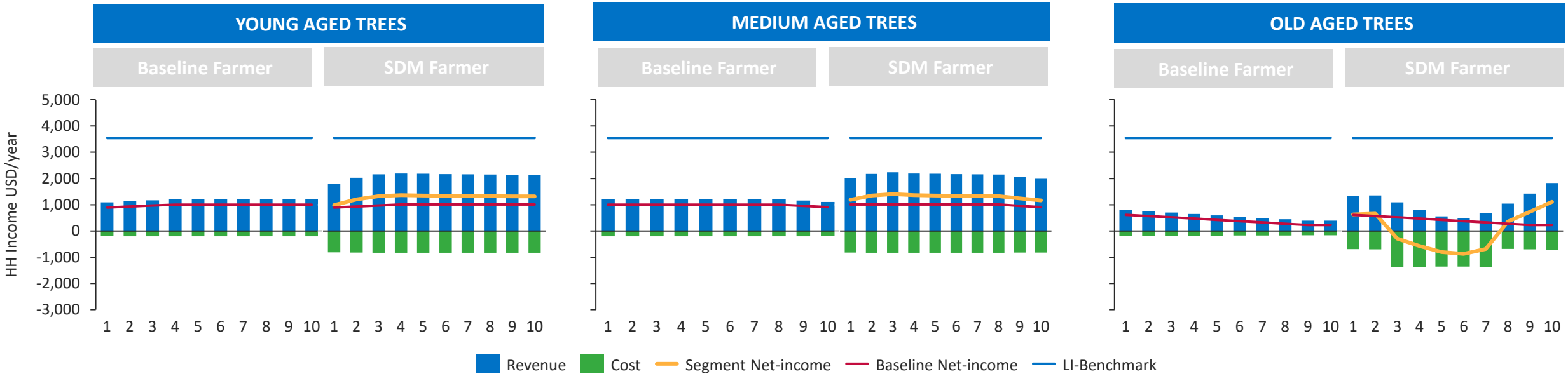
- Farmer segment, representing 19% of Sucden's farmer base, with households of on average 6 people, a total land-size of 2.7 Ha, and trees that are 17 years on average, see [here] all details

Old

- Farmer segment, representing 6% of Sucden's farmer base, with households of on average 6 people, a total land-size of 2.7 Ha, and trees that are 32 years on average, see [here] all details

← Back to Segmentation
Go to Segment P&Ls →
Go to Farmer Assumptions →

On average, all farmers within the SDM achieve a positive impact from becoming members of Sucden's service package and implementing the received services



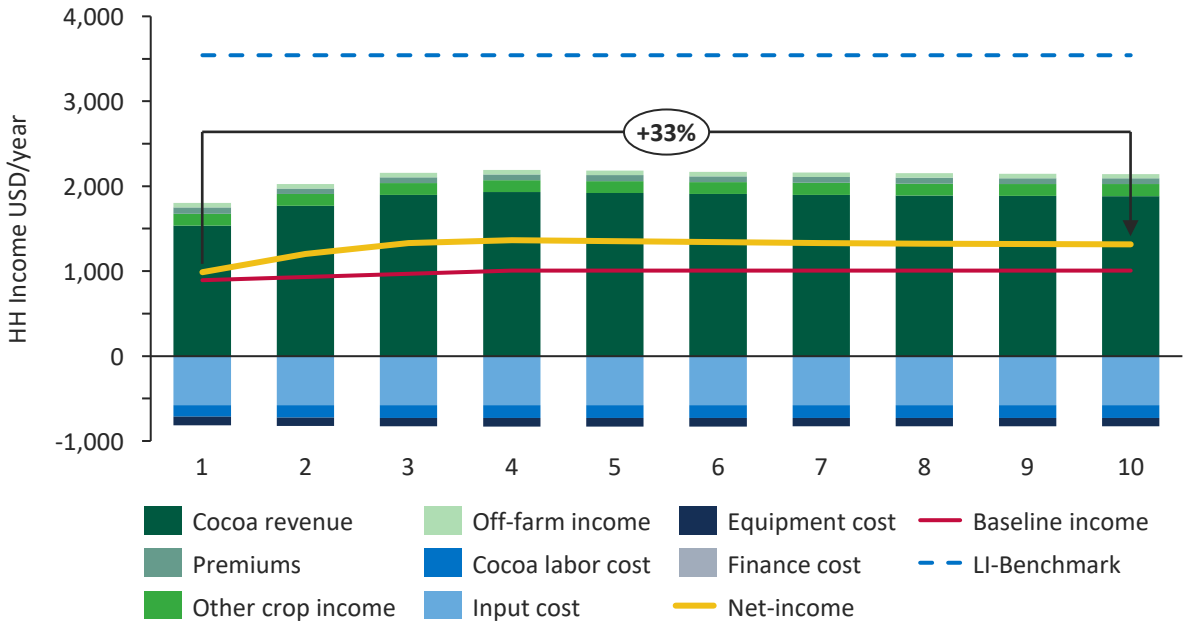
- Compared to the farmers outside of Sucden's SDM, the SDM Farmer is able to increase its income by USD 303 (31%) on average/year
- The gap to achieve a living income, based on a family size of 5-6 people, remains stable at around USD 2,255 (64%) on average/year
- See cash flow analyses, [here]

- Compared to the farmers outside of Sucden's SDM, the SDM Farmer is able to increase its income by USD 314 (32%) on average/year
- The gap to achieve a living income, based on a family size of 5-6 people, remains stable at around USD 2,237 (63%) on average/year
- See cash flow analyses, [here]

- Compared to the farmers outside of Sucden's SDM, the SDM Farmer has a decrease in average income of USD -376 (93%) on average/year, driven by replanting in year 3 -7
- The gap to achieve a living income, based on a family size of 5-6 people, increases to around USD 3,515 (99%) on average/year, but significantly decreases when trees become productive (year 8 in the P&L)
- See cash flow analyses, [here]

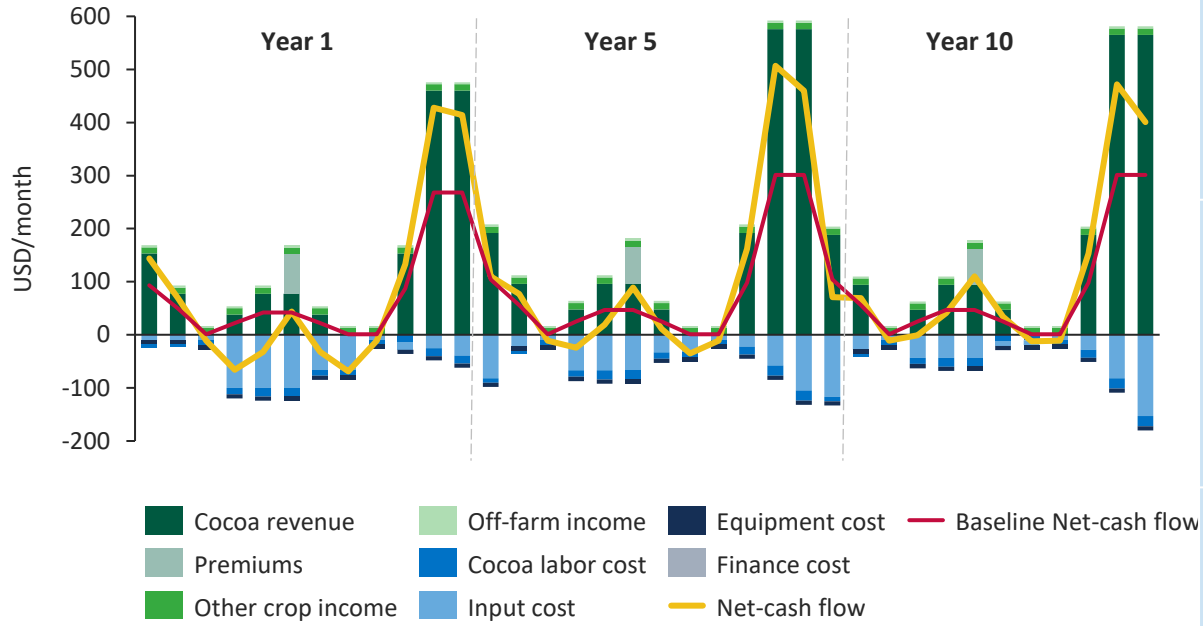
Access to finance is pivotal for a farmer who has young trees. It is a means of mitigating the effects on households of cash-constrained months, which potentially result from implementing certain GAPs. It also allows farmers to access high quality inputs, thereby potentially supporting to earn a higher annual income.

P&L 10-year timeline



- Household income increases by 33%, while the living income gap remains at 63%, and the delta to Baseline income increases to 31% as a result of mature trees and the adoption of GAP, and use of high-quality inputs
- Farmers do not bear finance costs as cooperatives settle these costs by keeping 50% of premiums paid by Sucden for the farmers;
- Cost for the majority spent on labor and inputs (fertilizer and crop protection)

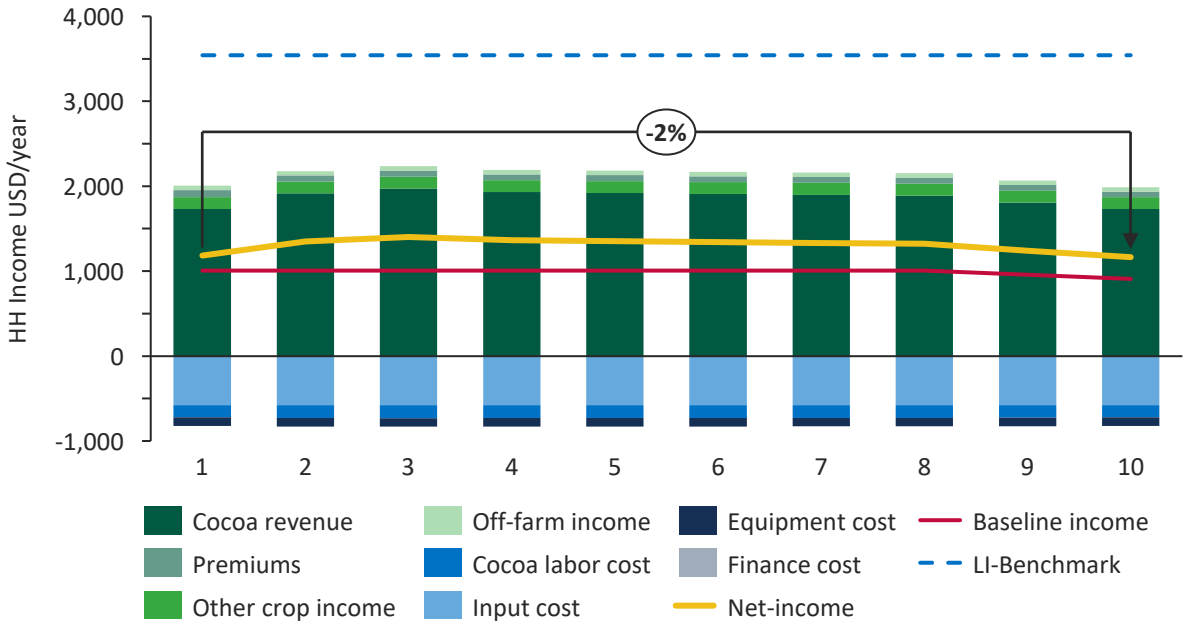
Monthly and Annual Cashflow (jan – dec)



- Farmer's cash-constrained positions are almost solved by year 10, due to the provision of finance for 75% of the cost of inputs, which is to be repaid during the harvest months
- Farmers are able to pay school fees and inputs in June when the cooperatives pay out the sustainability premium
- Diversification could build farmers' financial resilience by providing additional cash flow in March-May and Aug-Sept

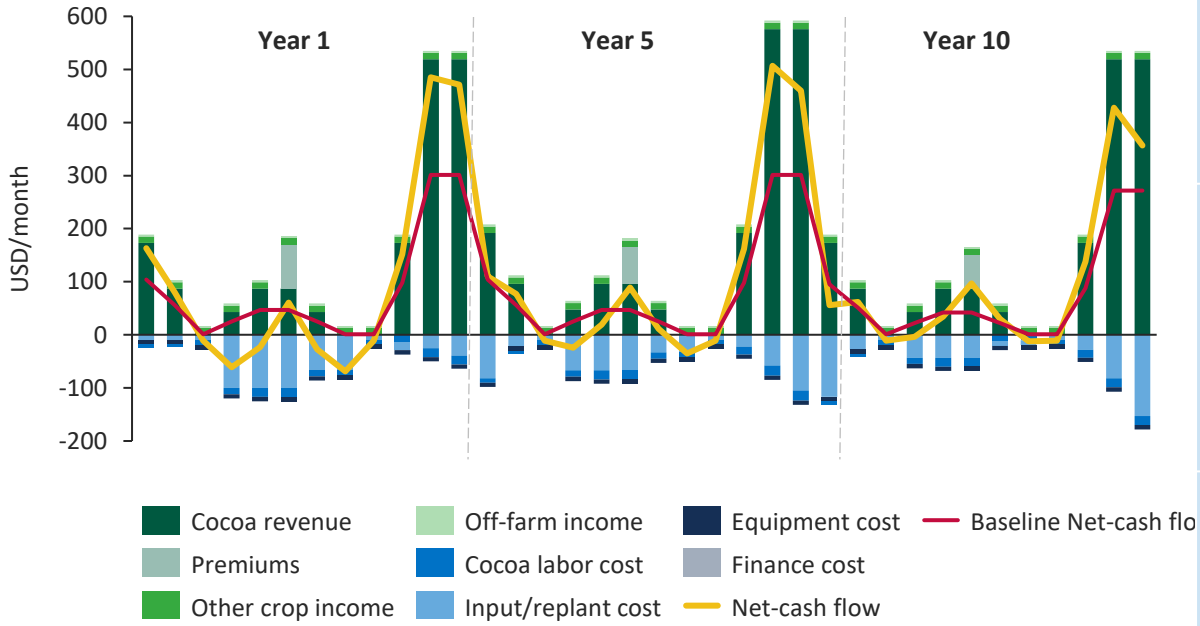
Access to finance is pivotal for a farmer who has young trees. It is a means of mitigating the effects on households of cash-constrained months, which potentially result from implementing certain GAPs. It also allows farmers to access high quality inputs, thereby potentially supporting to earn a higher annual income.

P&L 10-year timeline



- Household income remains stable, while the living income decreases to USD 2,237 (64%) compared to the Baseline USD 2,551 (72%) as a result of mature trees and the adoption of GAP, and the use of high-quality inputs
- Farmers do not bear finance costs as cooperatives settle these costs by keeping 50% of premiums paid by Sucden for the farmers;
- Cost for the majority spent on labor and inputs (fertilizer and crop protection)

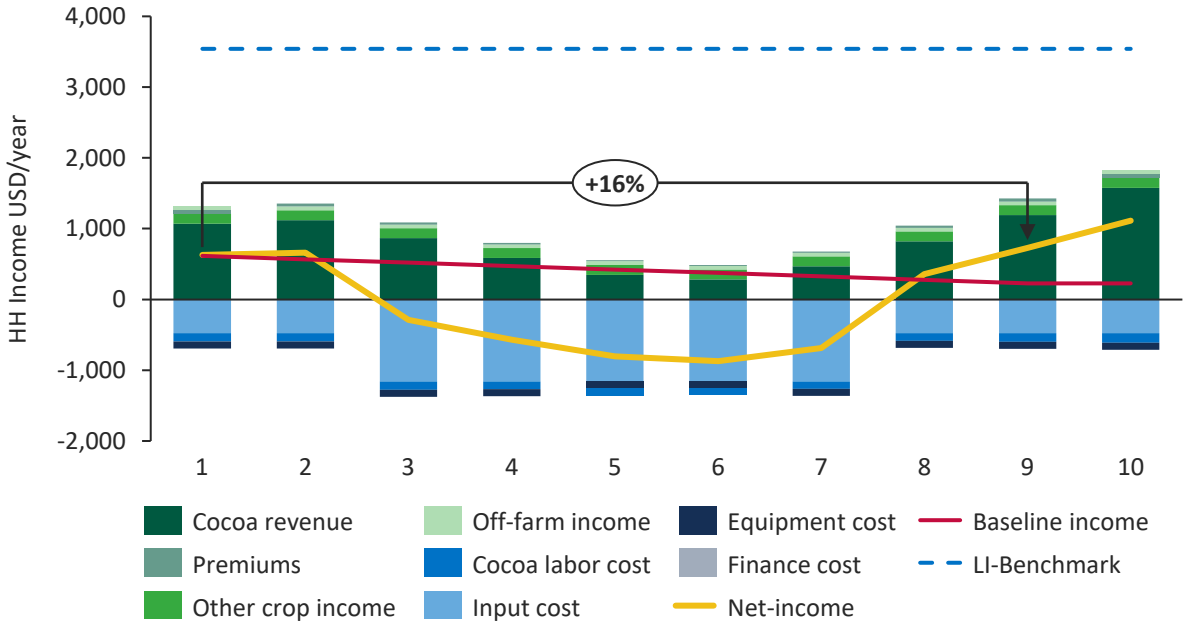
Monthly and Annual Cashflow (jan – dec)



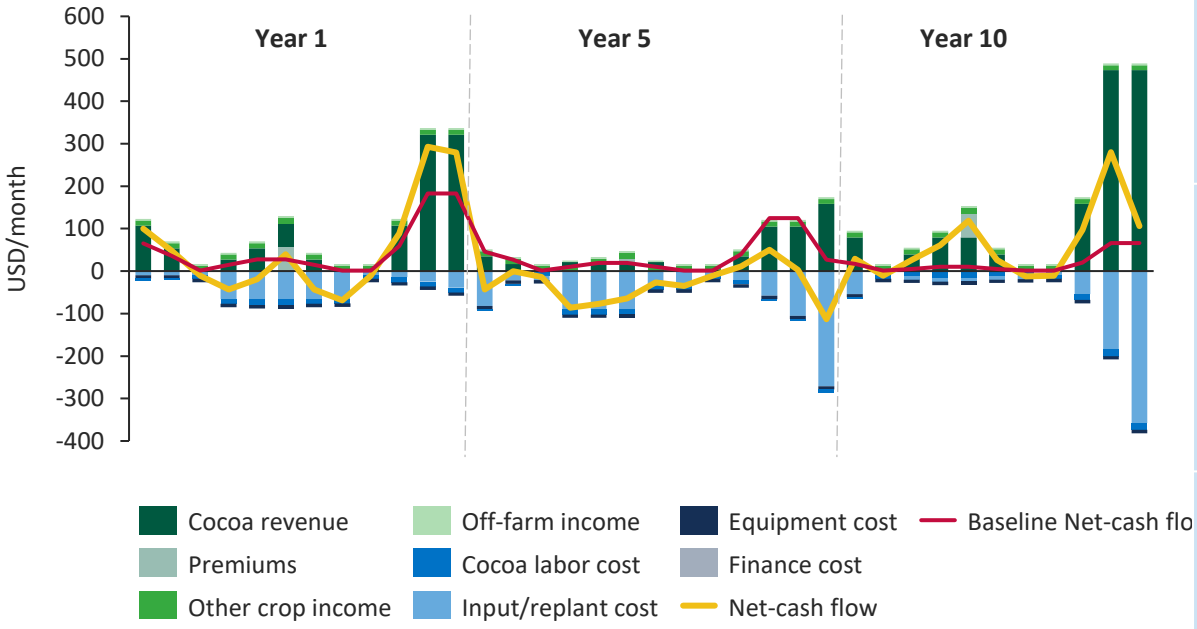
- Farmer's cash-constrained positions are almost entirely addressed by year 10, due to the provision of finance, covering 75% of the cost of inputs. This finance is to be repaid during the harvest months.
- Farmers are able to pay school fees and inputs in June when the cooperatives pay out the sustainability premium
- Diversification could build farmers' financial resilience by providing additional cash flow in March-May and Aug-Sept

Farmers who replant their farm in 5 years require finance beyond the 75% of finance designated to cover the cost of replanting. This finance supports to reduce the number and the extent of cash constraint positions during the year of replanting

P&L 10-year timeline



Monthly and Annual Cashflow (Jan – Dec)



- The significant cost increase of inputs and decrease of cocoa revenue during years 3 – 7 is a result of replanting the old cocoa trees with new trees that require 4 years to mature.
- The SDM farmer is able to increase its income from year 9 onwards compared to year 1, showing a positive outlook of replanting after 8 years
- However, receiving replanting credit enables SDM farmers to lower the cash constrained position during replanting years, see 'Monthly and Annual Cashflow'

- Receiving 75% credit for the cost of buying cocoa seedlings is not sufficient to mitigate months of being cash constrained for a farmer, while earnings from the replanted trees are sufficient to recover the credit from year 10 onwards, showing room to increase the credit to potentially 100% of replanting cost
- During replanting years (3 – 7), farmers have an average negative cash flow of USD 191 per month, showing the significant need for additional income from diversification or other funds in March-May and Aug-Sept

Assumptions and methodology

Key assumptions and background information

This section:

- *Shows all assumptions used for the SDM operator*
- *Shows all assumptions used for the Cooperatives*
- *Shows all assumptions used for the different farmer segments*
- *Explains the methodology of the Digital Transformation Assessment*
- *Explains the methodology of the Gender Ladder*

Annex | Assumptions and methodology | Service Delivery Model

Assumptions for the Service Delivery Model calculations

This information is only available in the private version of the report

Annex | Assumptions and methodology | Cooperatives

Assumptions for the Cooperative calculations

This information is only available in the private version of the report

Assumptions for the Farmer calculations (1/2)

	Young		Medium		Old	
Variable	**Baseline 1**	**Segment 1**	**Baseline 2**	**Segment 2**	**Baseline 3**	**Segment 3**
Household size						
Household head	1	1	1	1	1	1
Adults	2.2	2.2	2.2	2.2	2.2	2.2
Children	2.4	2.4	2.4	2.4	2.4	2.4
OECD coefficient	2.8	2.8	2.8	2.8	2.8	2.8
Farm size	1	2.7	2.7	2.7	2.7	2.7
Cultivation cocoa	1	1.8	1.8	1.8	1.8	1.8
Cultivation non-cocoa	0.0	0.9	0.9	0.9	0.9	0.9
Tree age (average)	8	8	17	17	32	32
Replanting strategy	None	Continuous	None	Continuous	None	Staggered
Shade tree strategy	None	Medium	None	Medium	None	Medium
Performance of GAP	No	Yes	No	Yes	No	Yes
Application of Crop protection	No	Yes	No	Yes	No	Yes
Application of Fertilizer	No	Yes	No	Yes	No	Yes
Sales to SDM Operator	0%	100%	0%	100%	0%	100%
Sales to Other off takers	100%	0%	100%	0%	100%	0%
Inputs on credit	No	Yes	No	Yes	No	Yes
Replanting finance	No	No	No	No	No	Yes

Assumptions for the Farmer calculations (2/2)

Variable		Value	Variable	Value	
Yield	Starting yield	450 kg/Ha	**Labor days**	188 days/adult/year	
with GAP		540 kg/Ha	**Labor required**	98 days/Ha	
plus Crop protection		572 kg/Ha	**Labor hired**	17% average	
plus Fertilizer		790 kg/Ha	**Cost of labor**	3,000 CFA/day	
plus Agroforestry		850 kg/Ha	**Inputs**		
Tree density		1,100 trees/Ha	Fertilizer	250kg/Ha	450 CFA/kg
Yield curve	Year 4	30%	Insecticides	4 #/Ha	6,000 CFA/#
	Year 11	100%	Fungicides	16 #/Ha	1,000 CFA/#
	Year 25 onwards	-5% per year			
Replanting strategy			**Cocoa seedling**	1,000 CFA/seedling	
One-off		100% year one			
Staggered		20%/year from year 3	**Equipment**		
Continuous		3%/year	Non-mechanic	19,000 CFA/year	
Shade tree strategy			Mechanic sprayer	20,000 CFA/year	
Low		18 trees/ha	Other materials	19,000 CFA/year	
Medium		50 trees/ha			
High		100 trees/ha	**Finance**		
Other crop income		90,000 CFA/Ha = 93 days	Inputs	6 months	0% interest
Off farm income		50 CFA/day	Replanting	5 years (3 year grace)	0% interest

IDH developed a methodology and tool to support our clients in their digital journey, including a data base

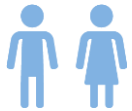
The Digital Transformation Assessment identifies and prioritizes digital opportunities (tech use-cases) that fit an agri-service provider's needs, with ROI estimates. Additionally, through a digital maturity analysis, areas of improvement are suggested for the agri-service provider. Based on the assessment, the tool allows you to match-make with relevant tech-providers.

Identify digital gaps	Expert network	Efficient and cost-effective	Intuitive, web-based platform
Identifying and prioritizing the tech use cases that are the best-fit for your business	We match-make through a database of tech providers and agri-specialists in your country	An affordable, simplified process, supported by our experienced team.	Web-based platform powered by a dynamic global database of 300+ tech providers

The DTA process

1. **Introduction with the organization |** Discuss the overall process
2. **Identification |** Performing the first step of the methodology in the online DTA on the use case database
3. **Prioritization |** Prioritize the earlier identified use cases from the database based on desirability and feasibility
4. **Digital Maturity Assessment |** Conduct the Digital Maturity Assessment to distinguish strengths and opportunities for improvement
5. **Results |** The results include identified and prioritized use cases and DMA analysis with improvement areas

IDH has adopted the following definitions to define the extent to which a gender lens has been integrated by partners. IDH aims for all its projects to be intentional and for some to be transformative.



Gender unintentional

No steps taken to understand the different needs and preferences of men and women, or target gender gaps/barriers.

Gender intentional

Considers the different needs and constraints of women and men and takes some steps to create gender equality. Such projects adapt to the needs of women and men without seeking to change gender norms or barriers.

Gender transformative

Understands the different needs and constraints of women and men and address the root causes of gender inequality. A gender transformative approach needs to foster changes in **individual capacities (agency)**, **gendered norms and expectations (relations)**, and **institutional rules and practices (structures)**.

Why we believe investing in women can work for business

- By tailoring goods and services to the needs of women, companies can reach a large and often underserved market, potentially increasing revenues from service provision or enhancing their supply security.
- If women had similar access to and control of productive resources as men, yields of female farmers could increase by up to 30 percent. Higher farm yields and incomes create greater business opportunities for companies working with those farmers.
- Companies that are committed to gender equality outperform their peers. Improving gender diversity in the workplace can improve a company's financial performance by up to 25 percent.
- When companies are seen to invest in gender equality, this has the potential to lead to higher levels of farmer and/or worker loyalty. Conversely, unequal opportunities for women can negatively affect companies' reputations which can lose businesses customers as well as workers.