



AFRICAN COFFEE SECTOR

addressing national investment agendas on a continental scale

Cote d'Ivoire Case Study

Sector study conducted by Agri-Logic and Valued Chain by assignment of
the Global Coffee Platform
Contact: info@agri-logic.nl

INTRODUCING NATIONAL COFFEE INVESTMENT AGENDAS FOR AFRICA



CHALLENGE:

- Currently Africa only supplies 10% of global coffee volumes, while coffee was first discovered in Ethiopia.
- In most African origins, yields are low, quality is inconsistent, and supply chains are inefficient.

OPPORTUNITIES:

- Buyers value certain coffees from Africa for their quality, and there is a potential to increase volumes to meet growing demand.
- Coffee may contribute to sustainable development in Africa's rural areas.

INVESTMENT AGENDAS:

- Greater understanding of challenges and opportunities in mainstreaming sustainable coffee production.
- Insight into required funding, return on investment, and possible public and private contributions.
- Insight into impact of investment based on quantitative research and stakeholder consultation. Benchmarks and analysis are based on 2015 data.
- Full reports available on the GCP website for Angola, Burundi, Cameroon, Côte d'Ivoire, Ethiopia, Kenya, Rwanda, Tanzania and Uganda.



CONTENT OF THIS REPORT

- Executive summary
- Positioning of coffee from origin
- Production areas in origin
- Supply & demand trend and
- Market interest in sustainability
- Value chain structure
- Farm level production systems
- Supply chain efficiency
- Differential competitiveness
- Cost of production
- Current farmer business case
- Production and price effects of investments
- Impact, cost and return per intervention
- Effect on farmer business case
- National sector business case
- Proposed public and private contributions
- Conclusion



INVESTMENT OPPORTUNITIES ANALYSIS

- The following slides describe the required investment (cost) and expected returns (revenue), as well as the expected impact on price, volume, quality and livelihoods.
- Investments are analysed on a sector level: total increased revenue in relation to total additional cost. On a sector level, all of these opportunities present a positive return on investment.
- Cost and benefits may not be attributed to the same actor in the value chain (e.g. government and buyers pay for farmer training, while the farmer gains most of the additional revenue from yield increase).
- Also, specific interventions may not lead to additional value creation, but to a redistribution of value within the chain (e.g. farmer grouping can lead to higher farm gate price, while export price and GDP contribution is not affected).
- Investment contributions are indicative based on stakeholder input. Investments and conditions to be negotiated within national public private platforms taking into account amongst others international competitiveness, governance, transparency and accountability assurance.



INVESTMENT AGENDA COTE D'IVOIRE COFFEE SECTOR – EXECUTIVE SUMMARY

- Since 2001 **coffee supply from Cote d'Ivoire has declined from 350,000MT to <100,000MT currently**. This is paired with a constant volume growth in cocoa, in times of low coffee prices other crops receive more priority.
- Cote d'Ivoire has an estimated 100,000-150,000 coffee farmers. **Cost of production is high, specifically labour and supply chain cost**. Coffee farms are generally not well maintained. To enable additional investment in inputs and rejuvenation, supply chain efficiency needs to be addressed. **Differentials are average to low, and expected to decrease if volume increases**.
- Farm sizes are medium to large, on average 2.5 ha but with low productivity. Paired with a cocoa farm, household incomes hover around the poverty line.
- Whereas individual farmers are smallholders, aggregation is relatively large, with several cooperatives and local buyers (pisteurs/traitants) who have set up strong networks and are often willing to invest in quality and volumes. **The bulk of Cote d'Ivoire exports go to markets that show a low willingness to invest in sustainability**. Two large international buyers active in the local market invest in verification and quality.



INVESTMENT AGENDA COTE D'IVOIRE COFFEE SECTOR – EXECUTIVE SUMMARY

- There is significant potential to increase the coffee sector value in Cote d'Ivoire through selective investment in farmer training, farm rejuvenation, use of inputs, and in-country processing. **Over a period of 10 years a cumulative investment of ~184 million USD can create ~1 billion in additional value** over the same 10 year period at today's coffee and input prices.
- **Volumes could double.** This requires large-scale investment in a combination of farmer training, rejuvenating the tree stock and facilitating access to inputs.
- Much of the added value created through such investments flows into the rural economy.
- **Income from coffee and other crops combined is sufficient to push farming households above the poverty line.** Cote d'Ivoire can as such become an example of how smallholder farming can work.
- **Grants are however needed to fill the funding gap.** Investing in coffee in Cote d'Ivoire is less commercially driven, but can have significant impact and develop a replicable model for smallholder farming.



COTE D'IVOIRE

Coffee to increase and diversify income of farmer, private sector and government

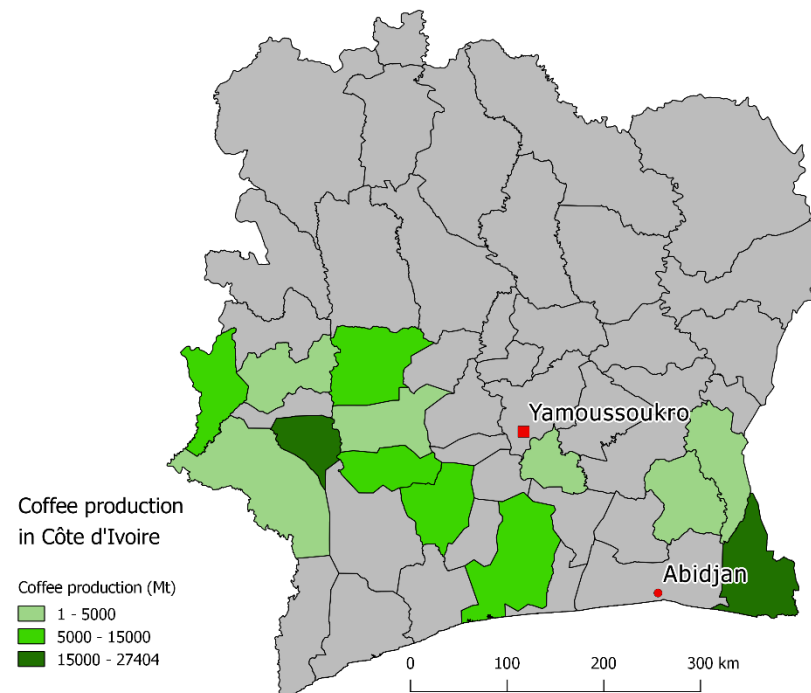
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POSITIONING OF COTE D'IVOIRE



| Item | Value |
|--|------------------------------------|
| Total volume (3 year average) | 96,500 MT |
| % of global production | 0,94% |
| % Arabica – Robusta | 100% Robusta |
| % natural – semi-washed – fully washed | 100% natural |
| Compound Annual Growth Rate of coffee production (2000-2015) | -8,4% |
| Main export markets | Algeria, South Europe, Vietnam |
| Market segments | Instant coffee and espresso blends |
| GDP | 72.2 billion USD |
| GDP – agriculture | 7.7 billion USD |
| GDP – coffee | 0.14 billion USD (green coffee) |

COFFEE PRODUCTION AREAS BY DISTRICT AND SUPPLY LEVELS



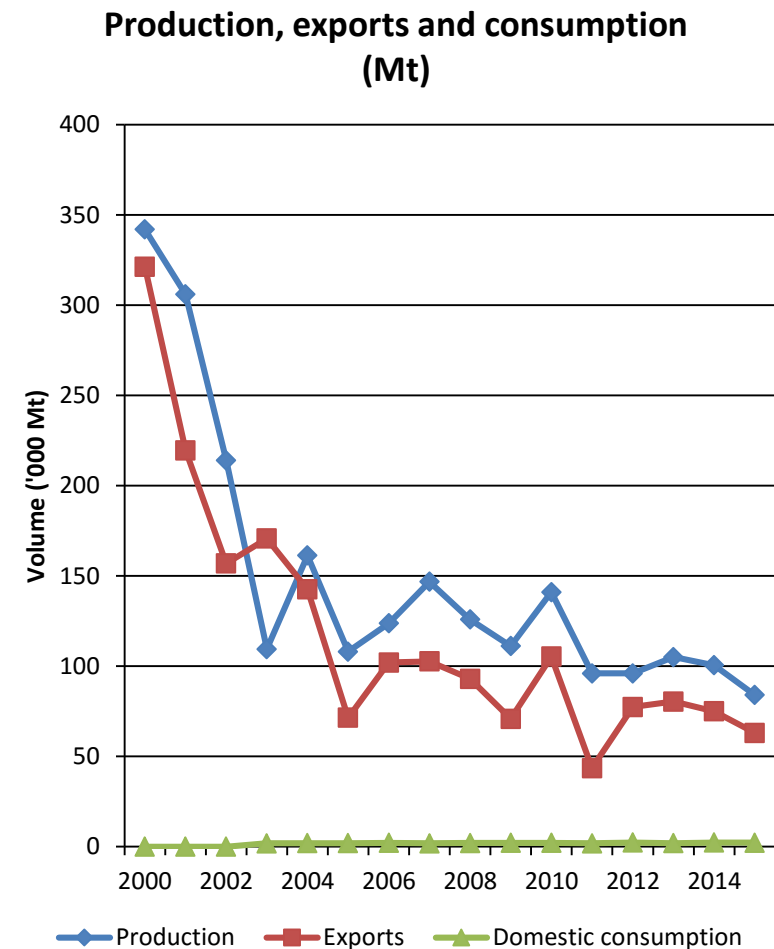
- Coffee production in the South of Cote d'Ivoire, with hubs in the East and West.
- Around Man (East) there are some farmers specialized in coffee.
- Coffee plantations have been largely abandoned. In most areas, coffee is a secondary product for farmers. Production areas compete with cocoa, cashew and (previously) rubber.

Sources: CCC (BCC) map, interviews, AL and VC analysis

COTE D'IVOIRE PRODUCTION HAS WITNESSED A STRONG DECLINE

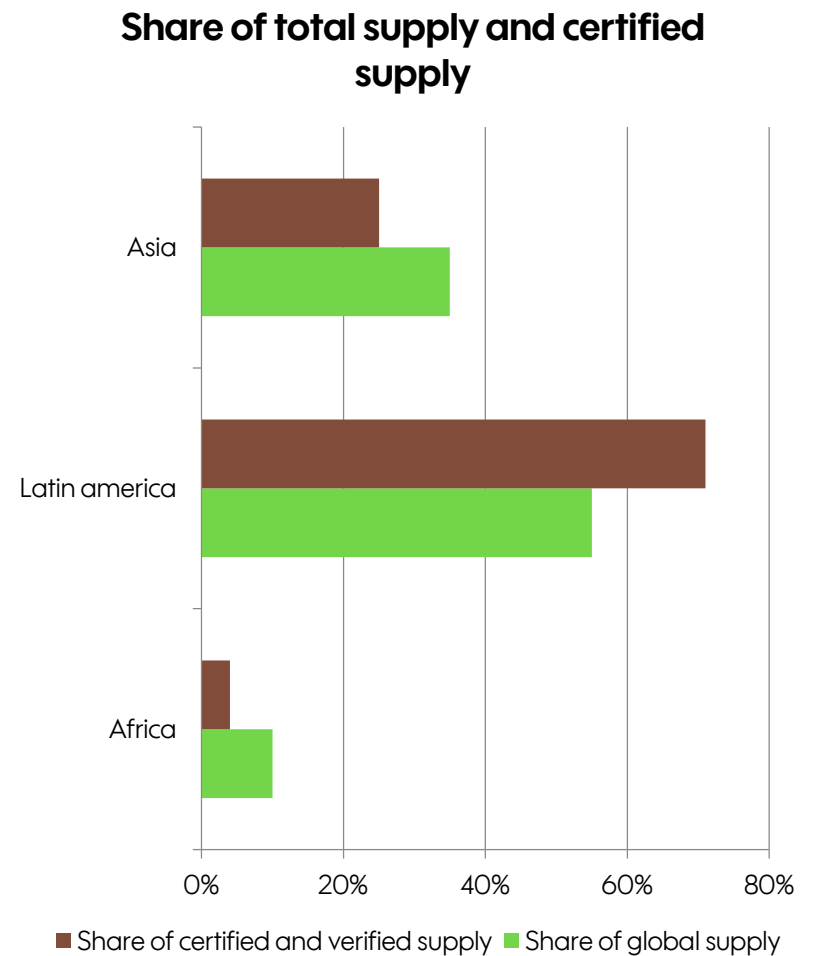
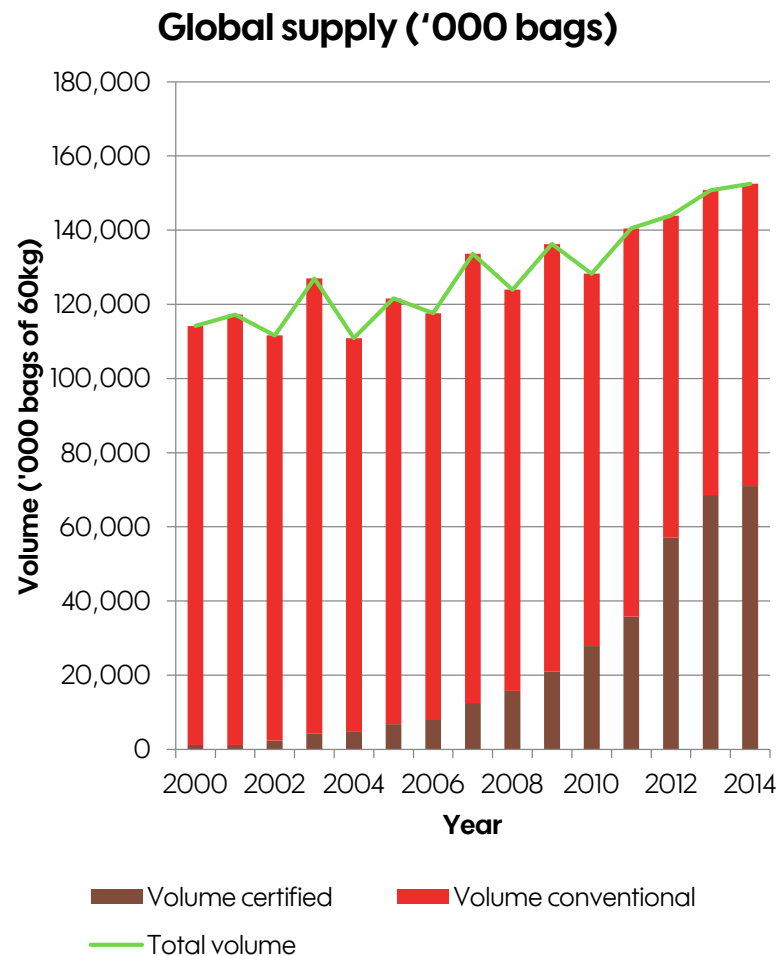


- The “coffee-crisis” reduced supply significantly as farmers neglected coffee. Currently, coffee prices are perceived as too low in comparison to cocoa and cashew which grow in the same areas.
- Private sector shows little interest in coffee, following the regulated pricing and controls that are considered too much effort in relation to smaller volumes. There are two large buyers active in coffee, and several cocoa cooperatives and traders doing some coffee on the side. Cleaning and grading facilities are currently degraded.
- Domestic roasting is relevant, mainly by one large factory who locally roasts coffee for export to the West-African region, and a few small roasters for local consumption.
- Strong ambition from Conseil Café Cacao to relaunch coffee production and exports, with focus on replanting.



Sources: USDA, interviews, AL and VC analysis

AFRICA LAGGING IN SHARE OF CERTIFIED SUSTAINABLE SUPPLY



Sources: USDA, CTA, AL and VC analysis

VERIFICATION USED IN SUPPLY CHAINS, NO MARKET DEMAND FOR CERTIFICATION



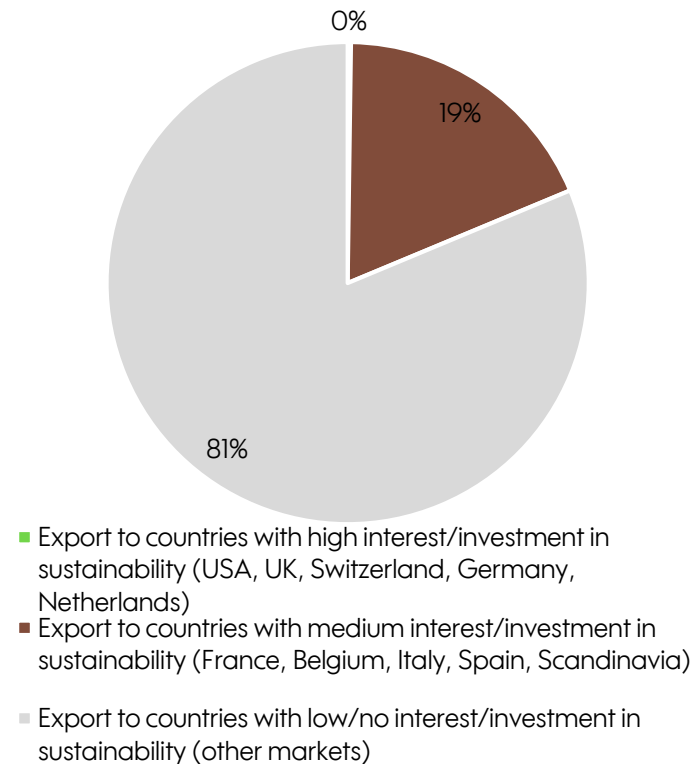
- 4C verification is taking place in the supply chains of two major international actors, one roaster and one trader.
- Collectively these two companies had 36,732 Mt of 4C verified coffee supply in 2015. The other standards, UTZ certified, Fairtrade and Rainforest Alliance do not have any coffee certified in the country.
- 4C sales data are proprietary at a country level, hence we do not know the volume sold as 4C verified.
- The regulated pricing in Cote d'Ivoire allows for payment of premiums under certain conditions. These premiums are the only form of price competition that is allowed.
- In this regulated market, premiums are generally paid for verified coffee and are a bit higher compared to other origins but also include quality or loyalty payments.
- Some cooperatives and traders that have experience in sustainability in cocoa have tried implementing coffee certification, but don't complete the process or don't renew certification due to lack of market demand.

Sources: Industry interviews, AL and VC analysis

LOW MARKET INTEREST IN SUSTAINABILITY, BUT INVESTMENT IN QUALITY AND LOYALTY



Cote d'Ivoire exports (% of total) and market interest to invest in sustainability in destinations



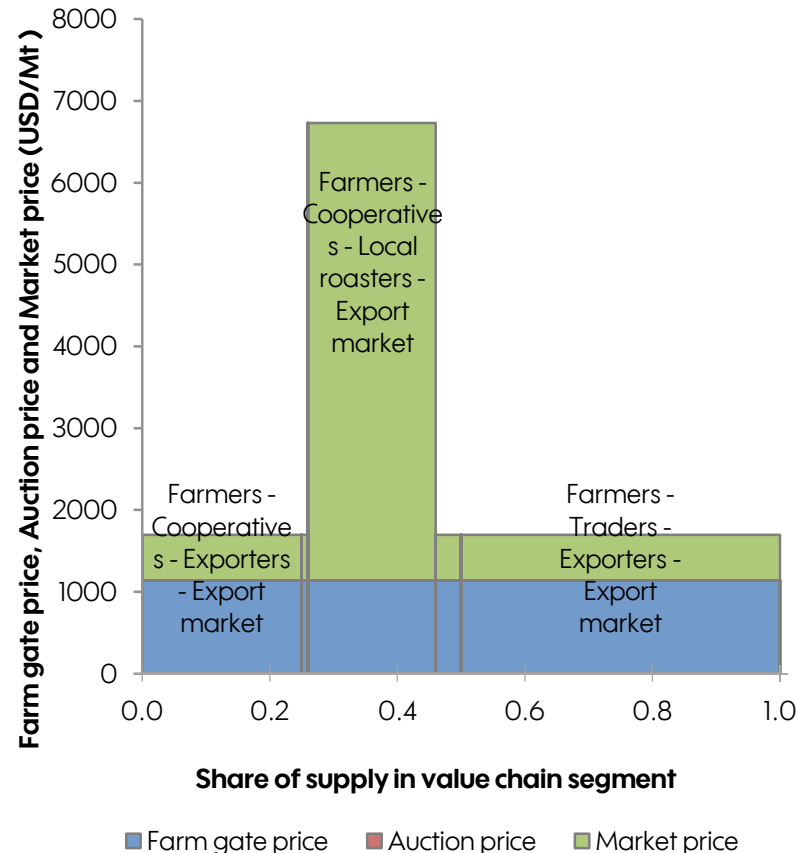
- Main market is Africa (Algeria and domestic consumption). No market interest to invest in sustainability to be expected at this stage.
- Supply chain investments are possibly driven by quality and loyalty and not sustainable production. This is already visible with two large buyers investing in their own supply base.

Sources: , VC and AL analysis

REGULATED EXPORTS WITH VALUE CHAIN STRONGLY INTERLINKED WITH COCOA



Value chain structure Cote d'Ivoire Robusta 2015



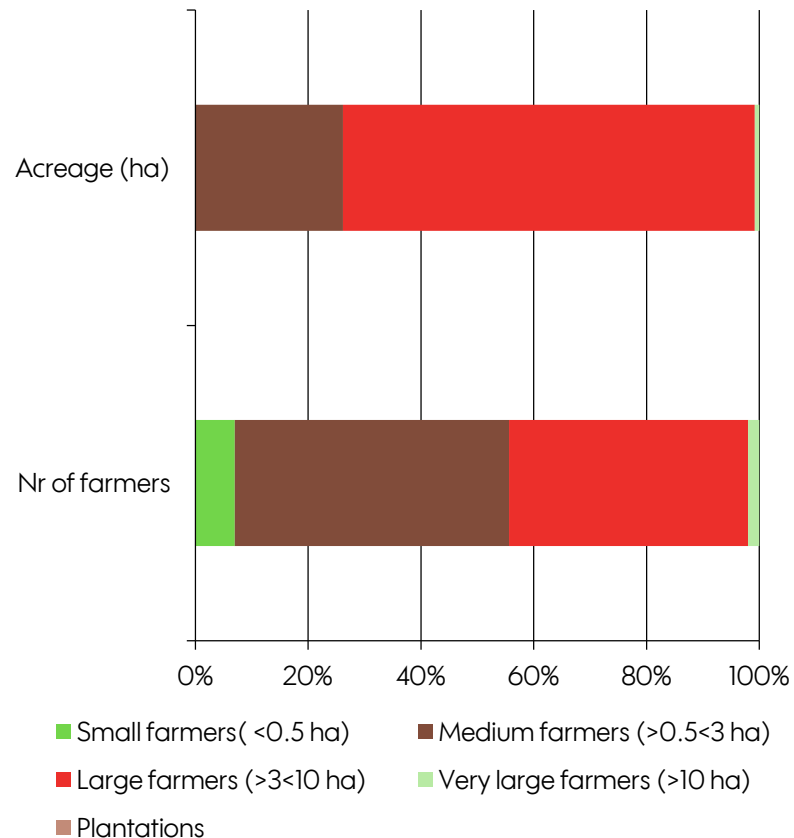
- 3500 cooperatives generally trade in both cocoa and coffee. Around 50% of farmers are member of a cooperative (estimates range from 20-70%). Remaining volume is bought by local traders. In practice, local traders and cooperatives have similar farmer networks, and access to market is not significantly affected by either channel.
- One locally based factory roasting (mainly instant) coffee for export in the region, with significant addition to GDP.
- Farm gate and export prices are regulated by CCC are almost constant. With some room to pay premiums for sustainability, quality or loyalty. Farmers sell as cherry or green coffee, with hulling being contracted in the village or done by a cooperative or trader. If farmer delivers cherry they will get a lower (fixed) price.

Sources: CCC, , interviews, AL and VC analysis

COFFEE IS A SECONDARY FARMING ACTIVITY, AVERAGE FARM SIZE STILL MEDIUM TO HIGH



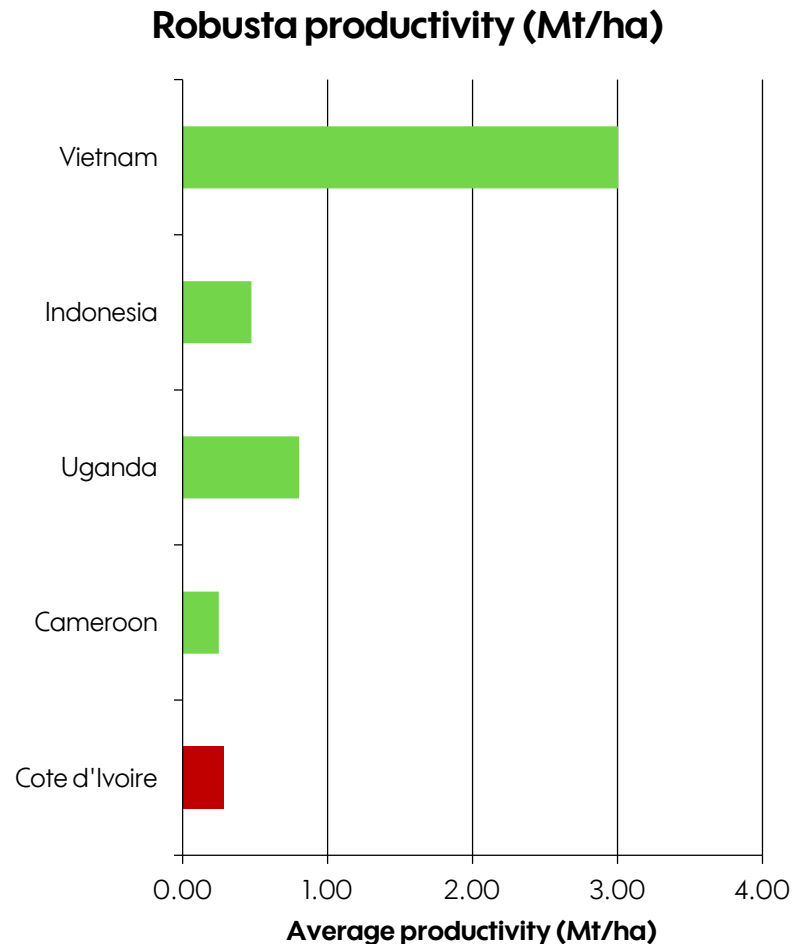
Nr of farmers and acreage distribution



- No plantations are reported, but smallholders have larger farms compared to other origins, with on average 2.5 ha under coffee.
- Furthermore, producers generally also plant other crops, putting total farm size at >6ha on average.
- Whereas individual farmers are smallholders, aggregation is relatively large, with several cooperatives and local buyers (pisteurs/traitants) who have set up strong networks.

Sources: PNIA, PSD, World Bank, interviews, AL and VC analysis

PRODUCTIVITY VARIES WIDELY, IS LOW ON AVERAGE, BUT SHOWS POTENTIAL



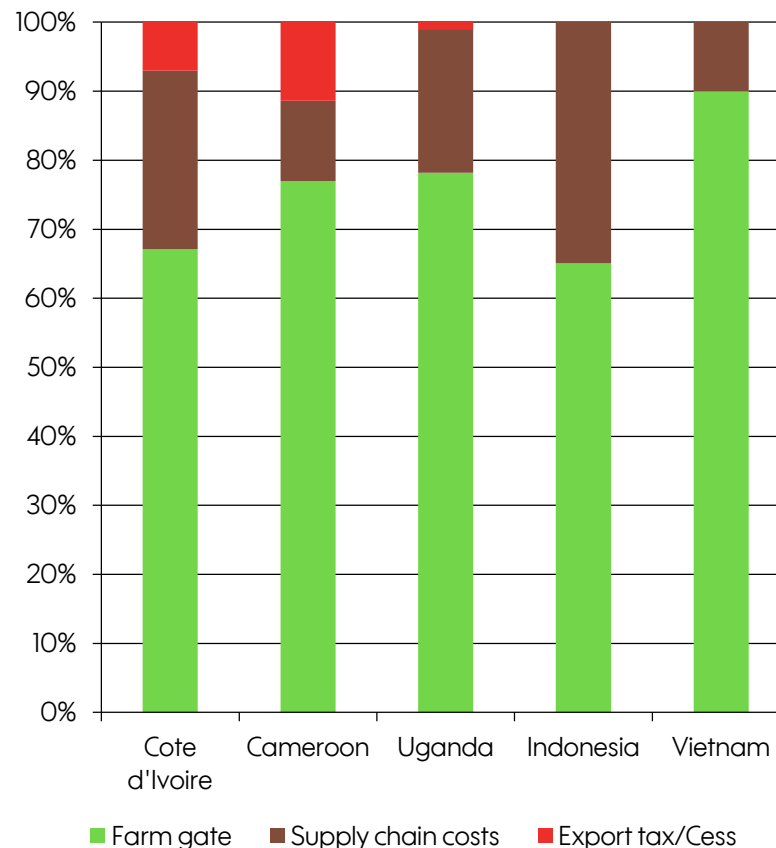
- Average yield is estimated at 300-350kg which is low compared to other major Robusta origins.
- Coffee in Cote d'Ivoire tends to be on monoculture plots. In periods of low markets, it is simply allowed to become overgrown, which currently is the case for a large part of coffee farms.
- Yield varies widely, ranging from less than a bag per hectare to >1MT/ha.
- Different yields are explained by effort (abandoned farms), number of trees, tree age and variety, professionalism and use of inputs.

Sources: USDA, FAO, interviews, AL and VC analysis

FARMGATE PRICE IS AMONG LOWEST OBSERVED, HIGH TAXATION



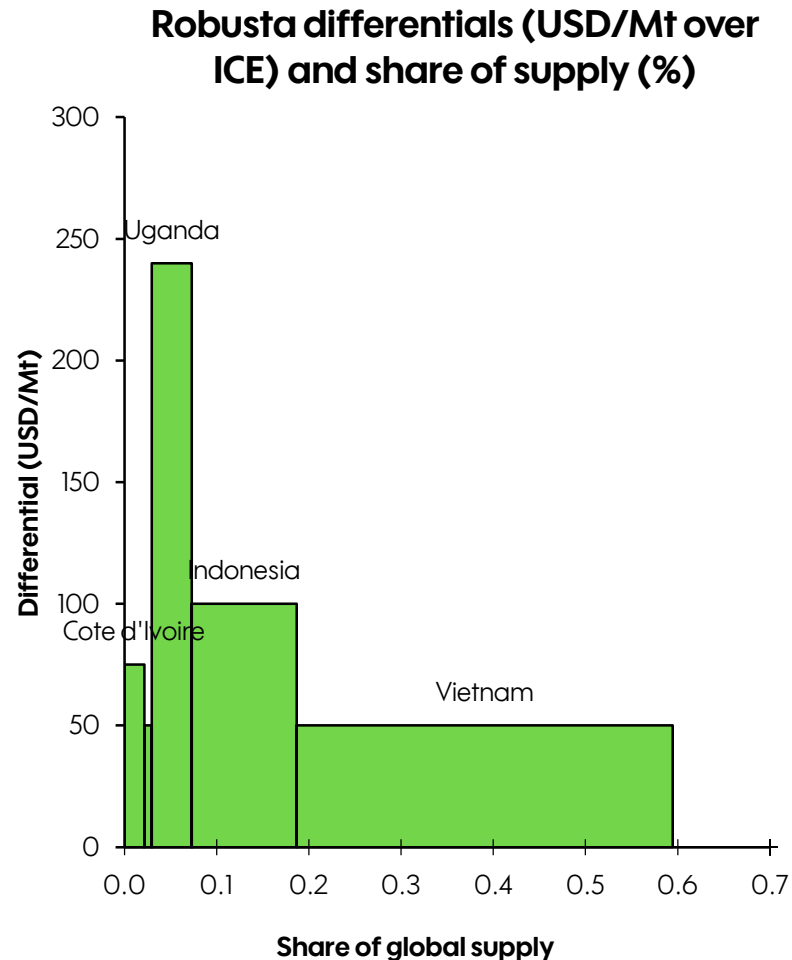
Value distribution Robusta (% of FOB price)



- The Conseil Café Cacao (CCC) regulates the sector. The mechanism is used for coffee and cocoa. Export prices set at the start of the season based on forward auction, and allocated based on estimated cost (barème).
- Value chain actors are required to follow these fixed prices for the season. Small premiums are allowed to some extent for sustainability, quality or loyalty. Premiums are as such the only existing form of price competition. This is only allowed within limits.
- Supply chain actors can create additional profits by being more cost efficient compared to the barème. This can generally be achieved with economies of scale.
- Farmgate price is among lowest observed, and farmers show little interest in coffee currently.
- Taxes are moderate to high and aim to serve CCC investments in the sector.

Sources: Interviews, TNS, AL and VC analysis

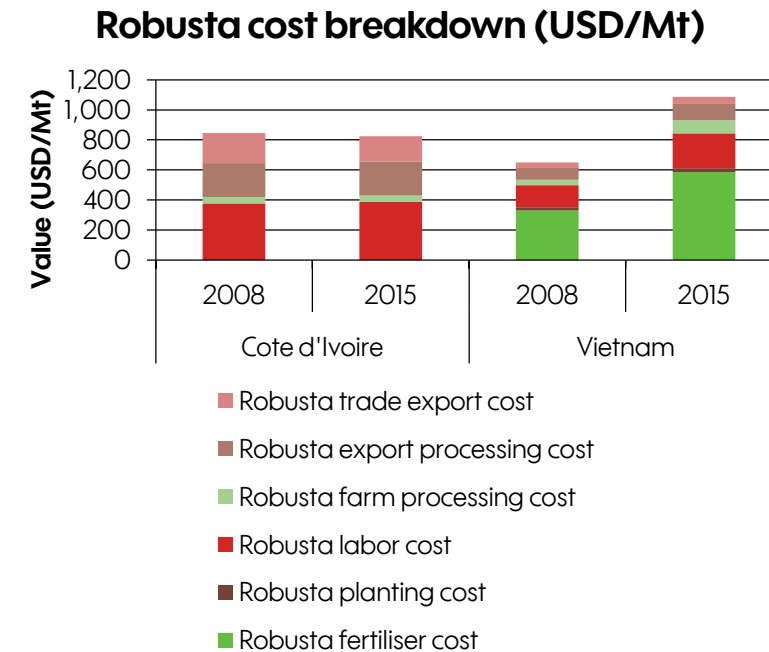
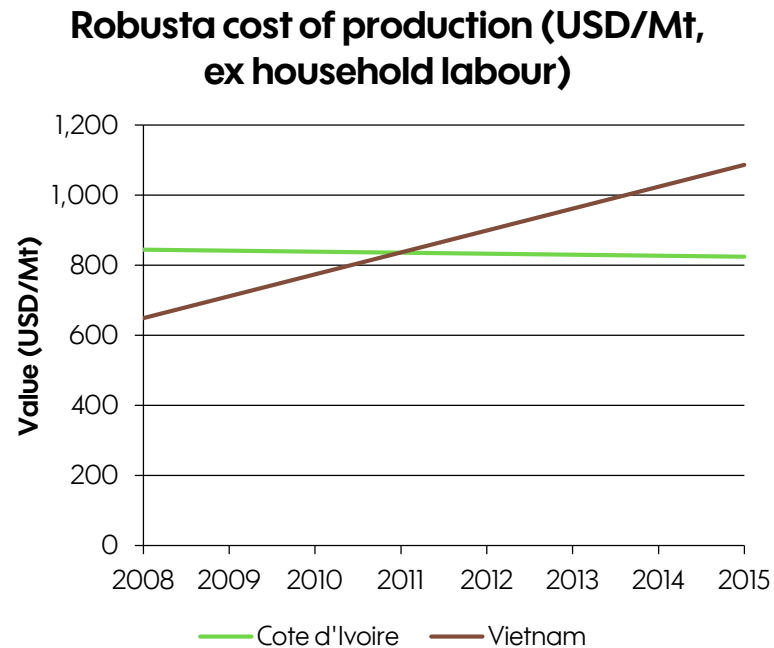
LOW DIFFERENTIALS IN LINE WITH HIGH VOLUME ORIGINS



- Cote d'Ivoire and Cameroon are considered interchangeable by some buyers, and differentials are in line with bulk volumes from Indonesia and Vietnam.
- Because of specific flavour preferences from buyers in mainly Algeria and North Africa there is a consistent demand and currently scarce supply keeping differentials on a medium level. It would be expected that differentials will decrease if supply is boosted without finding additional markets.
- Depending on availability, differentials are ranging between 50-100USD/Mt.

Sources: , USDA, AL and VC analysis

FARMING COST ARE LOW, BUT LIKELY TO INCREASE AND VALUE CHAIN IS INEFFICIENT



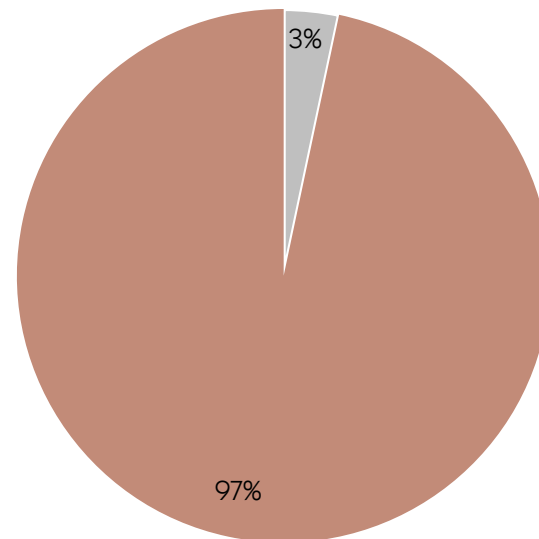
- Production cost are lower compared to increasing cost in Vietnam, but high value chain cost/margins exist which are not competitive. Labour cost are high. Investment in planting and fertilizer is needed to revive the sector which will increase cost and may put total cost at par with Vietnam.
- Supply chain cost include some hidden margins as they are included in the barème.

Sources: CCC, interviews, AL and VC analysis

LITTLE CREDIT PROVIDED IN COFFEE, BUT FARMERS HAVE COCOA PRE-FINANCE



Farmers' access to credit

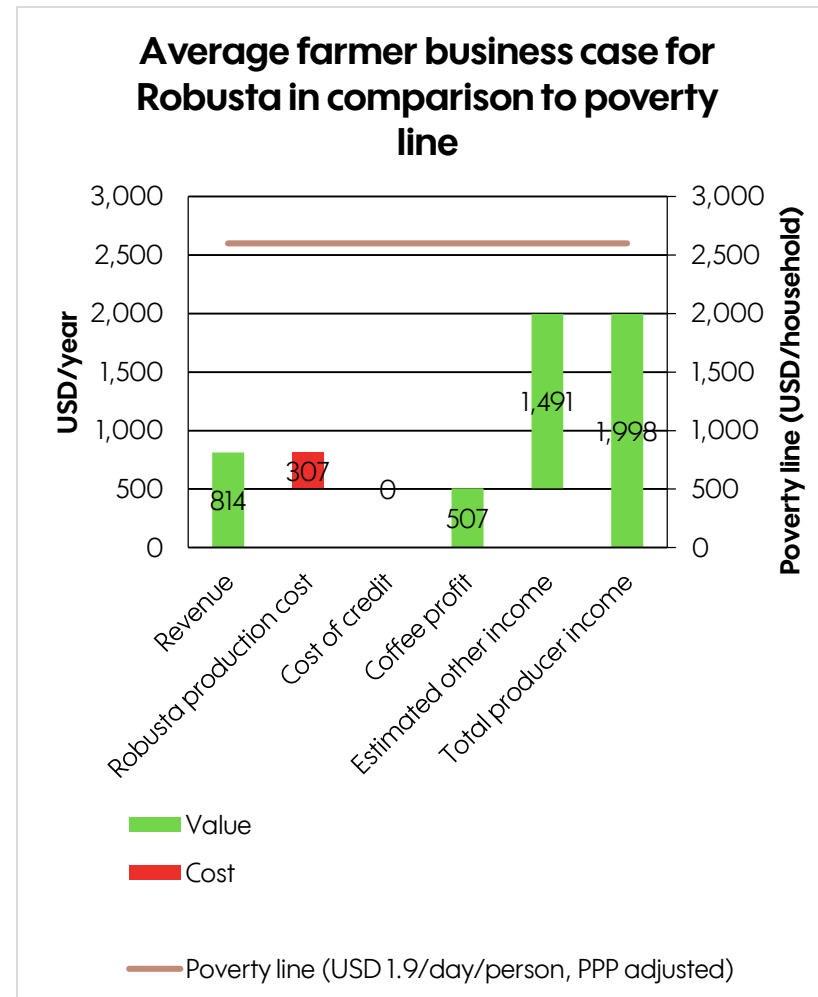


- Share of farmers LBA loan
- Share of farmers bank loan
- Share of farmers exporter loan
- Share of farmers cooperative loan
- No access to credit

- Almost no formal access to credit targeted at coffee, however, farmers are commonly also producing cocoa and will have access to credit for cocoa via the cooperative (usually provided by their buyer/exporter).
- Following a competitive cocoa market where price competition is not allowed, buyers aim to secure volumes with zero interest pre-finance.
- Value chain based pre-finance works well in Cote d'Ivoire, with good repayment rates.
- Loans are small in size <10% of crop value and only for the duration of the crop.

Sources: Interviews, USDA, AL and VC analysis

COFFEE IS A SECONDARY CROP, FARMER INCOMES AROUND POVERTY LINE



- Even though coffee alone is not very profitable for farming households, most farmers will have significant other revenue from cocoa and other crops. Cocoa often has more land allocated, higher yields and currently higher prices.
- Whereas in large polygamous families this is still just below the poverty line, the total household income is higher than in most African origins.

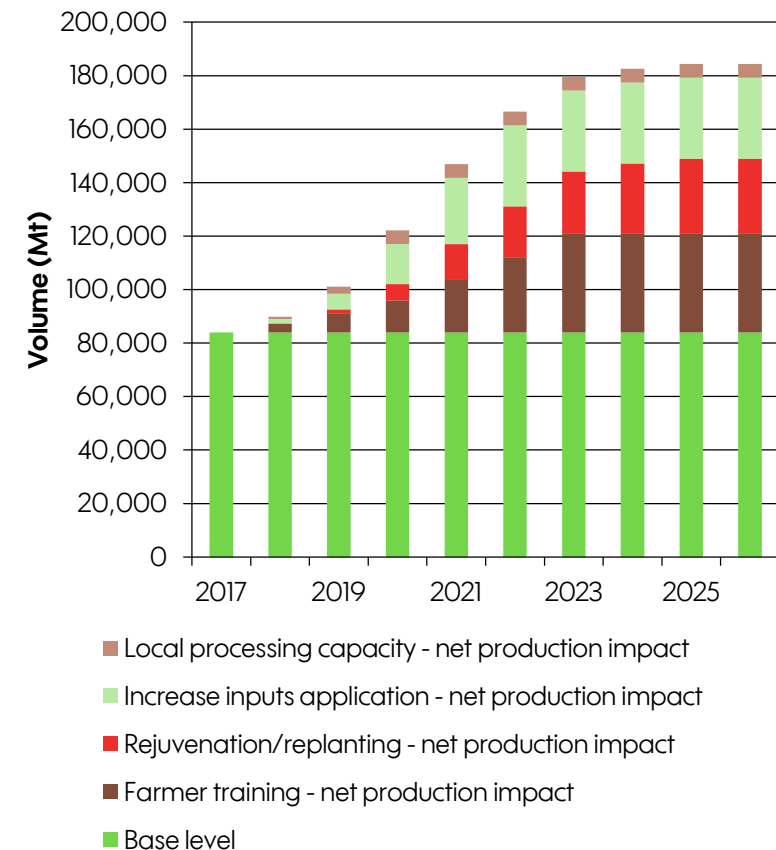
Sources: Interviews, USDA, AL and VC analysis

MODELLING INVESTMENT OPPORTUNITIES – PRODUCTION EFFECTS



- Farmer training combined with rejuvenation and inputs use can allow for a significant yield increase, whereas local processing improves the cherry to green coffee ratio.
- There is an interaction between the interventions, with farmer training being a requirement to implement other investment opportunities.
- Investment in productivity can lead to doubling coffee production in Cote d'Ivoire in 10 years. CCC targets an annual volume of 200.000MT in 2020, and while the volume seems feasible, it may take more time to realize it.
- Whereas Cote d'Ivoire in the past produced up to 400.000MT annually, we are uncertain about market demand to accommodate this volume.

Production effect of investment opportunities

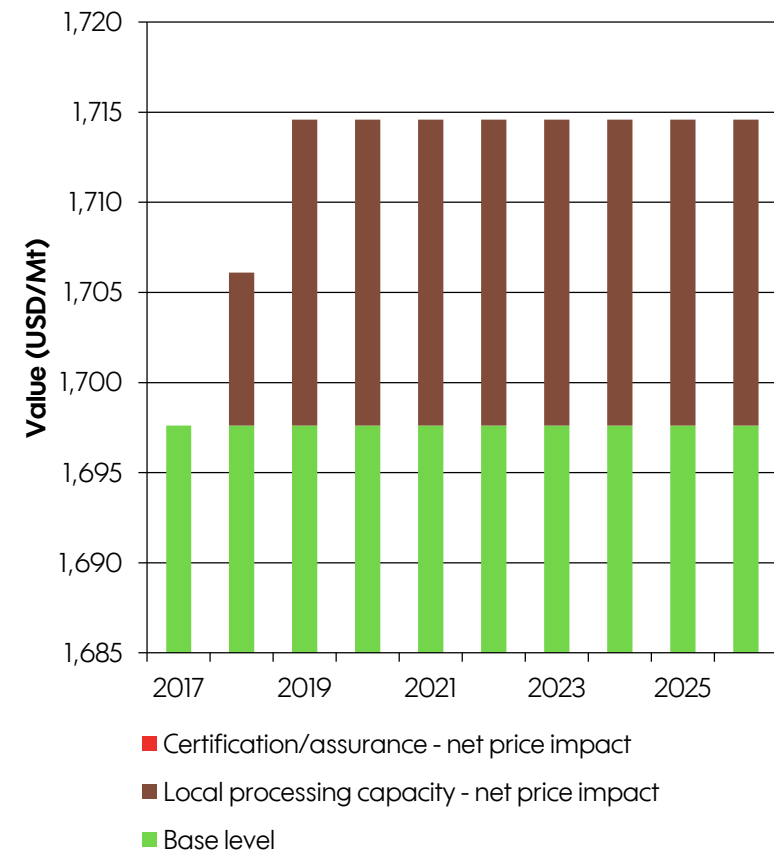


MODELLING INVESTMENT OPPORTUNITIES – PRICE EFFECTS



- Price effect of investments is limited.
- Local processing capacity may lead to a small increase of average export price / differential from quality improvement.
- Farm gate price is regulated and not affected by these interventions.
- Certification is not feasible given lack of market demand.

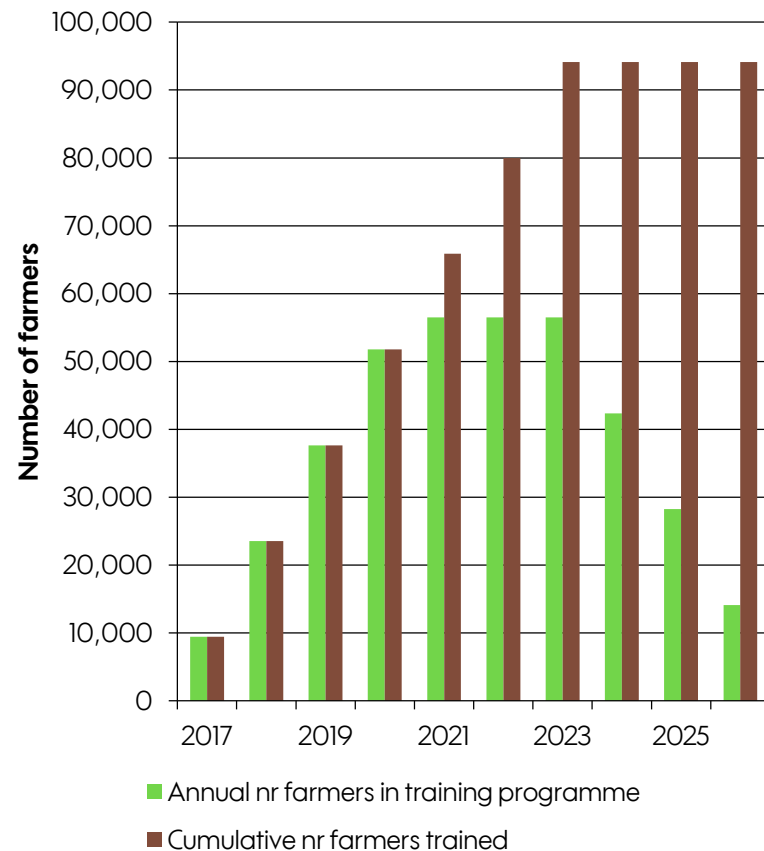
Export price effect of investment opportunities



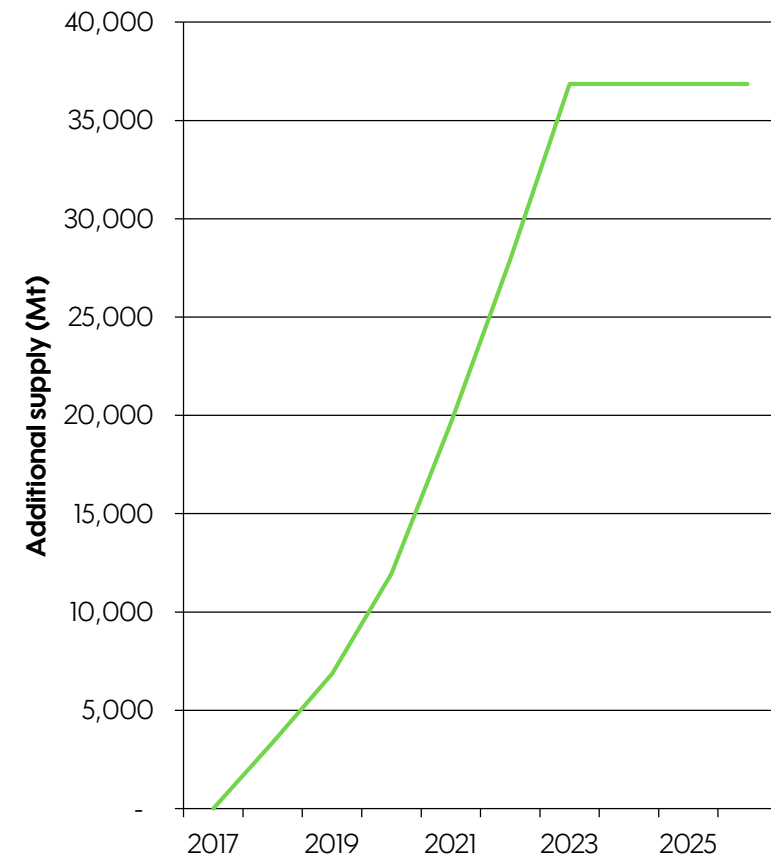
FARMER TRAINING INVESTMENT CAN GROW CURRENT SUPPLY BY >35%



Number of farmers enrolled in training program



Additional supply from farmer training programme (Mt)



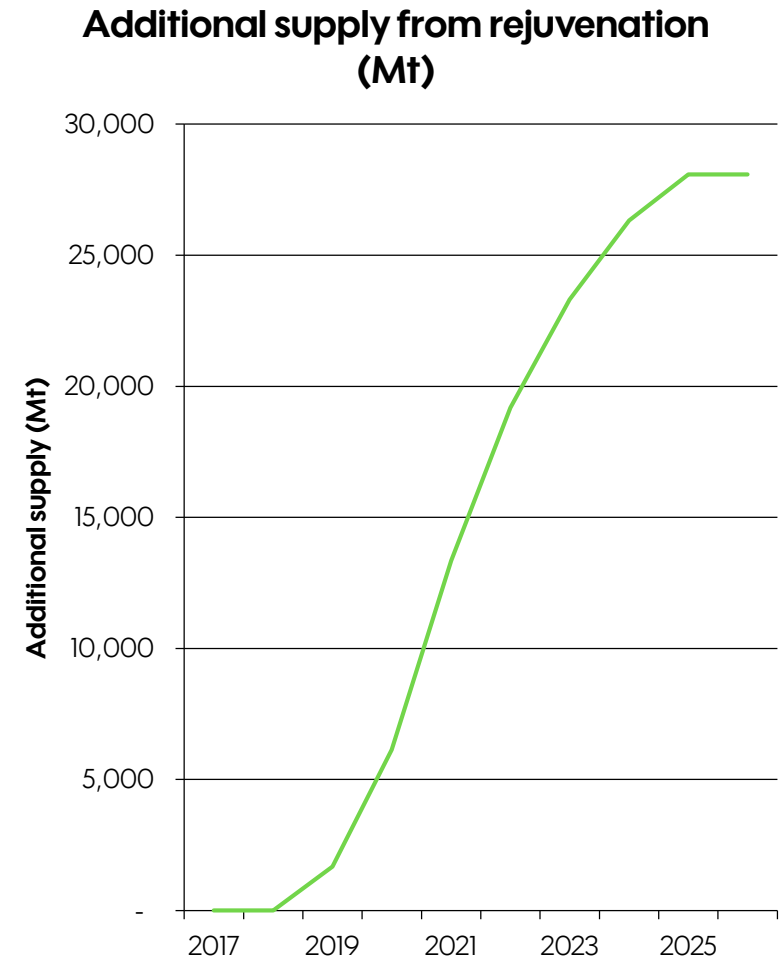
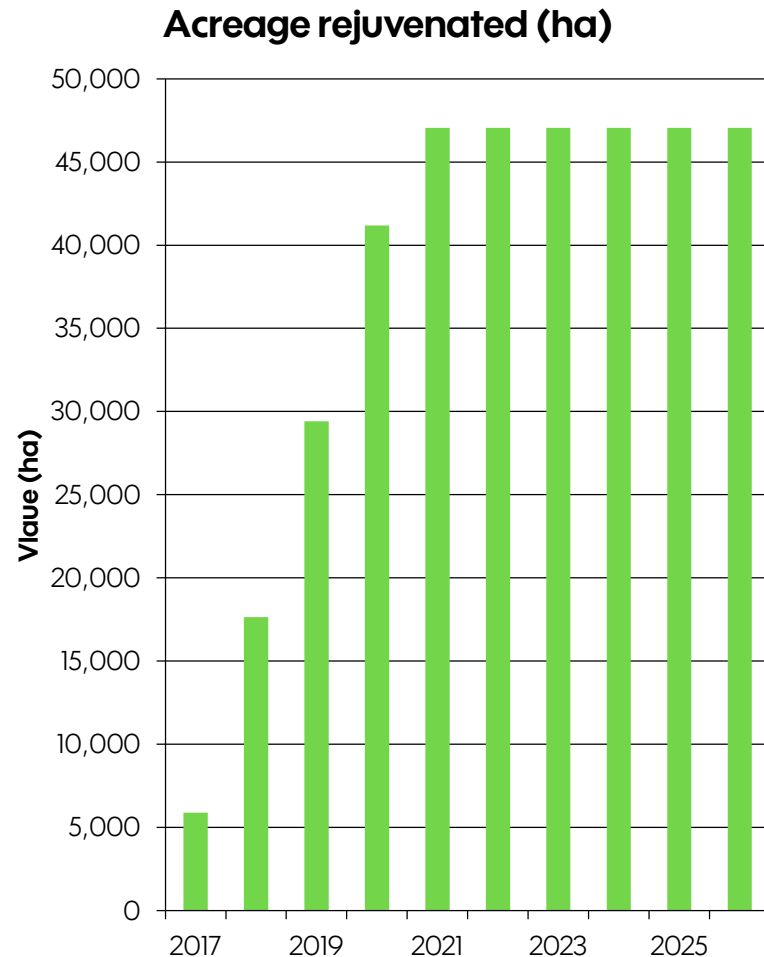
FARMER TRAINING CAN BE EMBEDDED INSTITUTIONALLY AT LOW COST



- For training on Good Agricultural Practices to be effective it needs to be participatory, intensive and should run for at least 4 years.
- In a context where farmers have medium to large farms, are often organized formally in cooperatives and informally around local buyers, government extension services exist, and many farmers have received GAP and other training for their cocoa, a training program can focus on strengthening institutional capacity. There are concerns regarding the quality and capacity of existing extension networks, but the case of cocoa has indicated that this can be addressed.
- Building on the current level of farmer organization and existing extension services, using a training of trainers approach, this program has a quite low cost per farmer for a 4-year training program.

| Indicator | Value (10 years) |
|---|------------------|
| Cumulative nr of farmers reached | 94,118 |
| Additional volume coffee per annum in steady state (Mt) | 36,860 |
| Total investment | \$ 18,832,529 |
| Total return | \$ 368,585,439 |
| NPV (10%) | \$ 175,450,291 |
| NPV (20%) | \$ 96,675,208 |
| Investment per farmer | \$200 |

REJUVENATION INVESTMENT TAKES A WHILE TO SHOW EFFECTS



REJUVENATION IS CRITICAL TO RELAUNCH THE COFFEE SECTOR



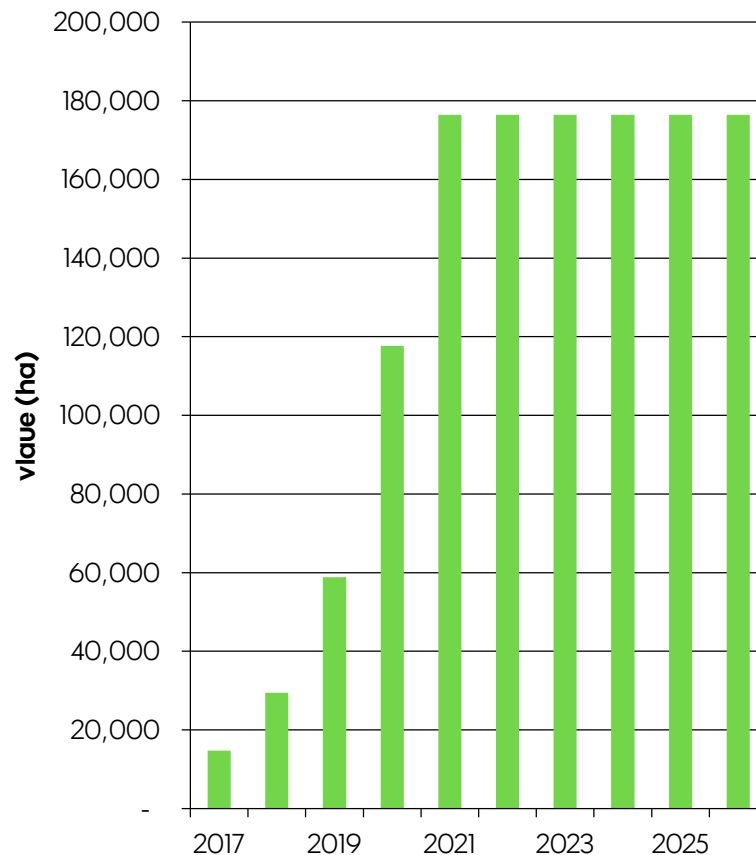
- Rejuvenation is critical, with a large part of coffee farms currently old, abandoned and overgrown.
- The CCC relaunch program has installed nurseries in all districts, whereas two large buyers are setting up private nurseries for the same. Availability of seedlings is still tight but getting better.
- Farmers are currently getting seedlings for free, and financing mechanisms are required.

| Indicator | Value (10 years) |
|---|------------------|
| Cumulative acreage replanted (ha) | 47,059 |
| Additional volume coffee per annum in steady state (Mt) | 28,084 |
| Total investment | \$ 35,294,118 |
| Total return | \$ 248,107,792 |
| NPV (10%) | \$ 97,120,726 |
| NPV (20%) | \$ 47,421,299 |
| Investment per ha | \$ 750 |

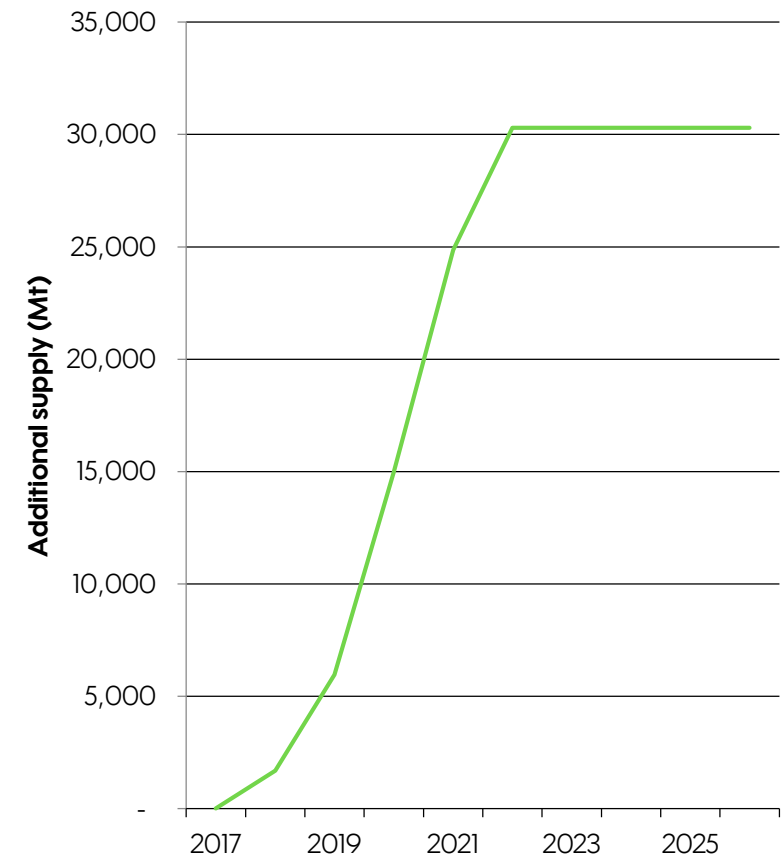
INPUT SUPPLY INVESTMENT CAN HAVE A WIDE REACH AND YIELD IMPACT



Acreage with enhanced input use (ha)



Additional supply from input use (Mt)



INPUT USE STILL LOW, BUT COULD GROW AS FARMERS' EQUITY INCREASES



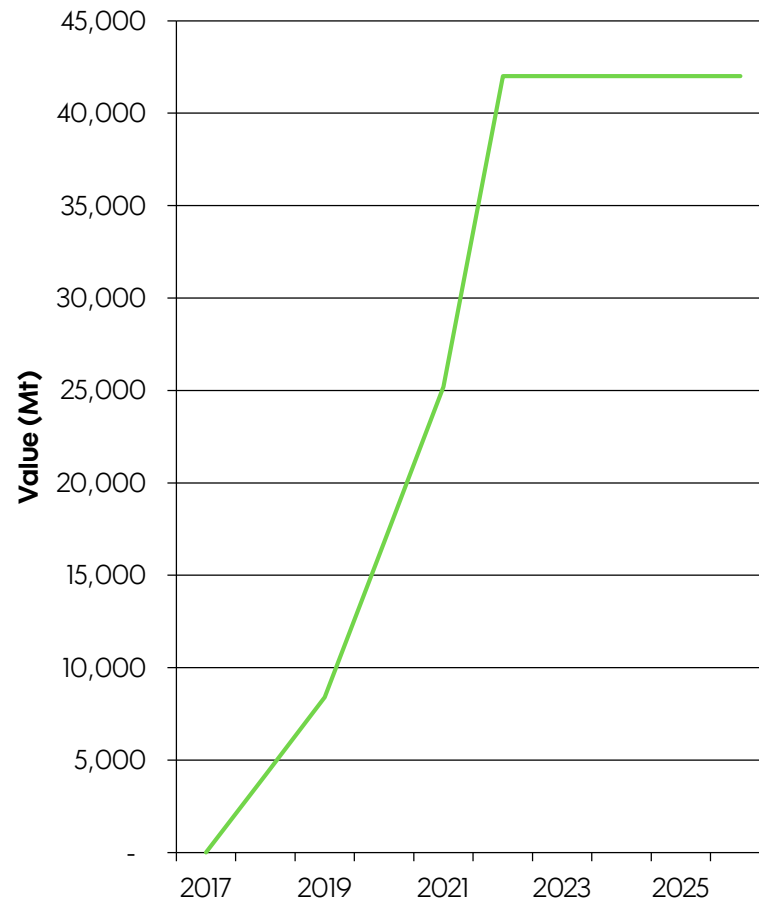
- Fertilizer application has become more common in cocoa, and farmers would be interested in using inputs if they are indeed attracted back to coffee.
- Only farmers that are part of the training programme should make use of the additional input supply investment to ensure optimal use.
- Applicability of inputs for different crops needs to be considered.

| Indicator | Value (10 years) |
|---|------------------|
| Acreage using additional inputs in steady state (ha) | 176,471 |
| Additional volume coffee per annum in steady state (Mt) | 30,299 |
| Total investment | \$ 127,941,176 |
| Total return | \$ 337,752,432 |
| NPV (10%) | \$ 105,863,826 |
| NPV (20%) | \$ 58,217,812 |
| Investment per ha per year | \$ 100 |

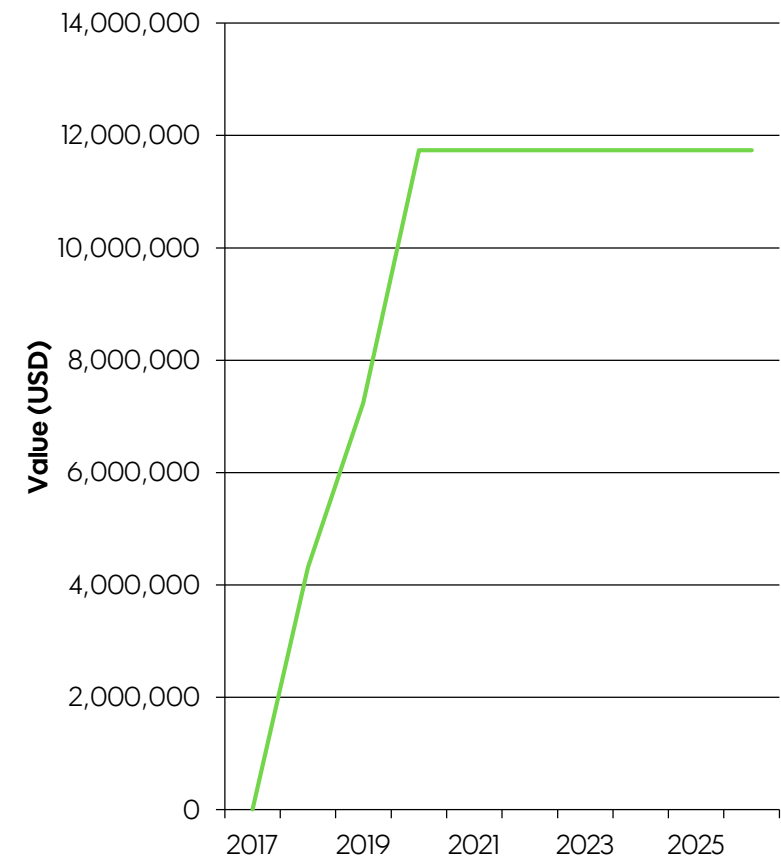
PROCESSING INVESTMENT REDUCES VOLUME LOSS AND IMPROVES PRICE



Volume with improved quality (Mt)



Additional revenue from quality improvement (USD)



PROCESSING INVESTMENT HAS GOOD RETURNS



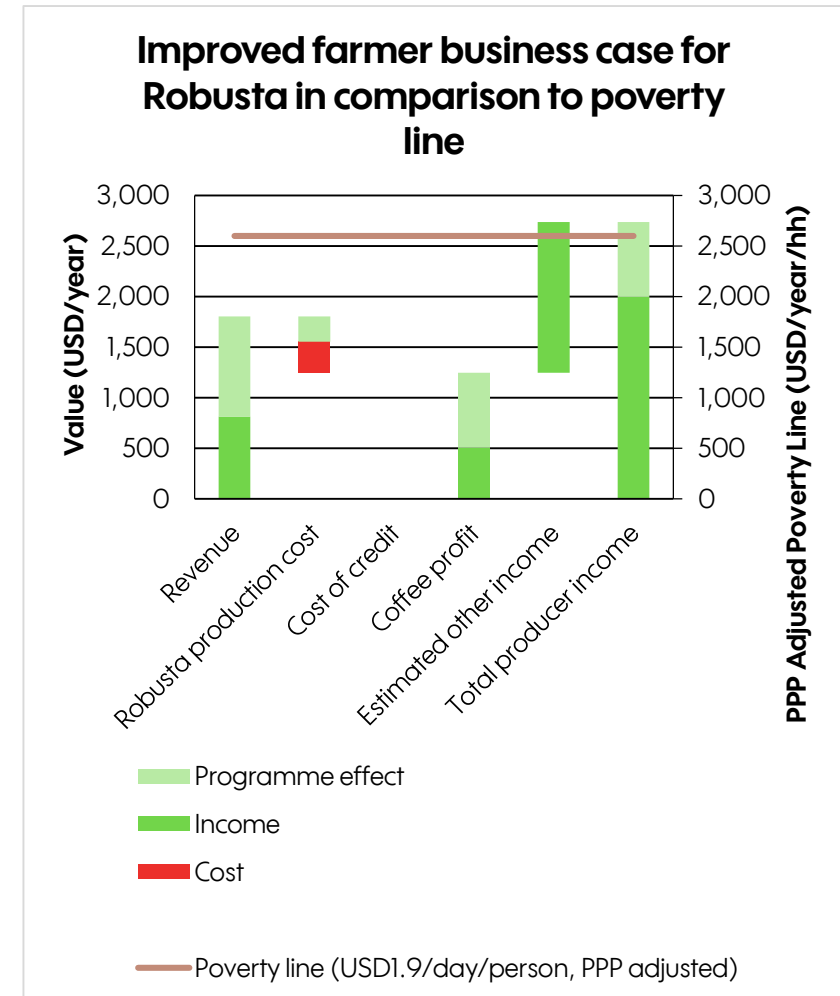
- Investment in hulling facilities for cooperatives and communities will increase green coffee yield from cherries. This has a significant impact on rural incomes.
- Processing will not directly affect price, as these are fixed in the barème. It is expected that FOB prices will increase over time, which can then be distributed to value chain actors in the barème.
- Improved and consistent quality will also re-open the European market for coffee from Cote d'Ivoire. This is needed to accommodate the additional volume that Cote d'Ivoire aims to produce.

| Indicator | Value (10 years) |
|--|------------------|
| Volume of improved quality per annum in steady state (Mt) | 42,000 |
| Additional value of improved quality per annum in steady state | \$ 10,226,822 |
| Total investment | \$ 2,646,000 |
| Total return | \$ 79,509,446 |
| NPV (10%) | \$ 42,162,100 |
| NPV (20%) | \$ 25,400,910 |
| Investment per Mt | \$ 10 |

INCREASED COFFEE INCOME PUSHES FARMING HOUSEHOLDS OUT OF POVERTY



- Investments in productivity and quality will have a significant impact on coffee income, putting it on par with average cocoa or cashew income.
- Income from coffee and other crops combined is sufficient to push farming households above the poverty line. Cote d'Ivoire can as such become an example of how smallholder farming can work.
- Equal importance of two (or more) crops protects farmer incomes from market volatility in just one crop.
- Cost of external labour are included in the estimates. Increased productivity of farms could boost local labour markets and provide an income to another member of the household. This effect has not been modelled.

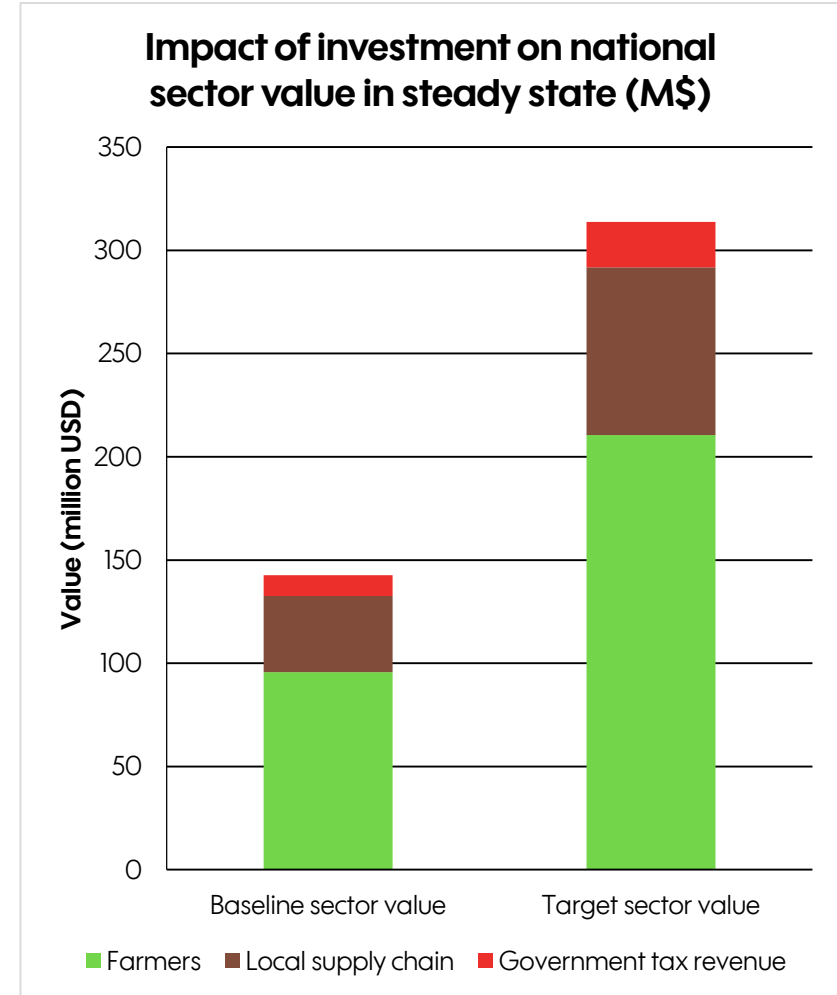


NATIONAL BUSINESS CASE: SIGNIFICANT INCREASE IN SECTOR VALUE FOR ALL



| Summary | USD over 10 years |
|------------------|-------------------|
| Total investment | \$ 184,704,824 |
| Total return | \$ 1,025,630,229 |
| NPV (10%) | \$ 415,638,725 |
| NPV (20%) | \$ 224,482,272 |

- Investment in coffee can significantly increase the sector value for all actors in the value chain. The majority of value flows into the rural economy.
- As productivity improves, local supply chains benefit, primarily from additional supply.
- The market is expected to accommodate this increased volume, with consistent quality re-opening the (South) European market for Cote d'Ivoire coffee.

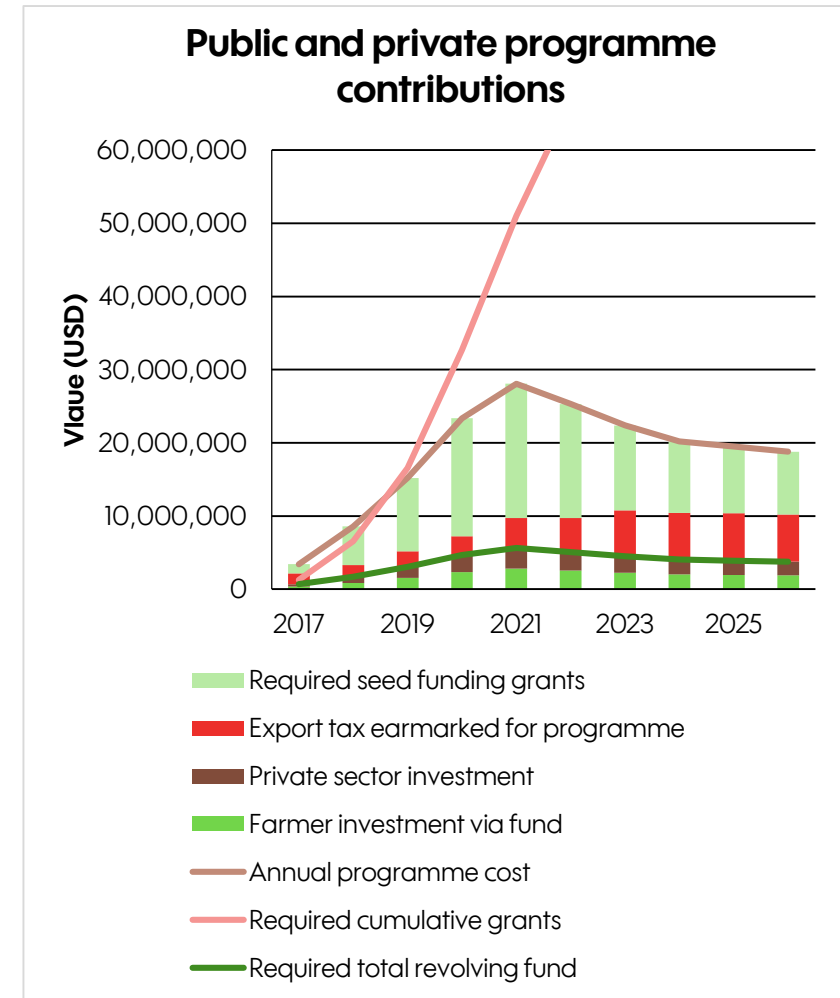


FUNDING THE INVESTMENT IS A CHALLENGE, GRANTS NEEDED



- With farmers expecting free seedlings, inputs and loans, their willingness to invest is low. Also, low farm gate prices compared to other origins do not allow much room to invest.
- Private sector investments are limited to two large buyers, no others show market interest.
- Government (CCC) are however driven to support coffee and have already committed a budget. It is expected they would be willing to invest part of export tax into the program.
- Grants are needed to fill the funding gap. Investing in coffee in Cote d'Ivoire is less commercially driven, but can have significant impact and develop a replicable model for smallholder farming.

| Summary | Value |
|---|----------------|
| ACF revolving fund size | \$ 5,615,106 |
| Required grant funding | \$ 105,622,701 |
| Required grant funding % | 57% |
| Required national budget (% export tax) | 50% |



Contributions are indicative based on stakeholder input. Investments and conditions to be negotiated within national public private platforms taking into account amongst others international competitiveness, governance, transparency and accountability assurance.



CONCLUSIONS

- The coffee sector contributes a small part of GDP in Cote d'Ivoire, but there is a strong drive to diversify from cocoa into other crops. This diversification would benefit farmers, the value chain and national economy.
- There is potential to increase coffee sector value, but the implementation model needs to be tailored to the local context, building more on institutional capacity as market interest to invest is low, and commercial inputs supply and finance are not competitive currently.
- Farming households are hovering around the poverty line, and increased coffee income can take them out of poverty as well as protect from shocks by diversification.
- Total programme investment amounts to an estimated 180 million USD over 10 years that would generate a return across the sector of 1 billion USD.
- Grants are needed to fill the funding gap. Investing in coffee in Cote d'Ivoire is less commercially driven, but can have significant impact and develop a replicable model for smallholder farming.



Sources

Global Coffee Platform, Sucafina, Olam, Hanns R. Neumann Stiftung, Café Africa, Conseil Café Cacao, Nestle, CABI, Sudden, Cocoonect, Sa2c, IVCAO

Data

US Department of Agriculture, Food and Agriculture Organisation, International Coffee Organisation, Conseil Café Cacao, 4C Association, UTZ Certified, Agri-Logic

About the Global Coffee Platform

The GCP is a collaboration between the 4C Association and the Sustainable Coffee Program of IDH – The Sustainable Trade Initiative. The Global Coffee Platform is an inclusive multi-stakeholder sustainability platform aligning the activities of a diverse network of stakeholders to set into action the global commitments made through Vision 2020 and create a thriving and sustainable coffee sector.

About Agri-Logic

Agri-Logic – management, consultancy and research – operates where agricultural production, development, international trade and consumer markets intersect. We combine a thorough understanding of farm level reality and commodity trade with scientific research skills and a track record in sustainability strategy design and implementation, to help clients deal with sustainability challenges and market requirements.

About Valued Chain

Valued Chain is an independent consultancy. We support organizations in understanding their value chain and stakeholders, identification and mitigation of risks, and realization of opportunities. We believe in integrating commercial objectives with sustainability of the business and its stakeholders. Working from Amsterdam and Lagos, we connect Europe and Africa.