



**USAID**  
FROM THE AMERICAN PEOPLE

# Coffee Price Risk Management Models

**Guatemala & Honduras summary of findings and potential interventions**

**September, 2019**

# Agenda

## Objectives for this document

Guatemala Situation Assessment

Honduras Situation Assessment

Potential Price Risk Management Models for Scaling

Annex

# As a reminder, the objectives and scope for this project

## MAIN OBJECTIVES

**Improve the livelihoods of smallholder farmers** by looking at price risk mitigation (PRM) models in the coffee and cocoa sectors

- **Create a broad understanding of what models exist** to help smallholder farmers manage price risk, including but not limited to those organized into cooperatives and/or other farmer groups
- **Map supply chains at a high level** to identify their overall structure, the interactions between actors and implications on pricing
- **Identify innovative PRM models** that can improve smallholder farmers' incomes
- **Understand when PRM models are most effective and relevant**, i.e., understand under what conditions these models work best and which models benefit smallholder farmers the most
- **Recommend actionable interventions** for USAID and partners to improve the use and outcomes of PRM models by actors in the coffee and cocoa supply chains

## SCOPE

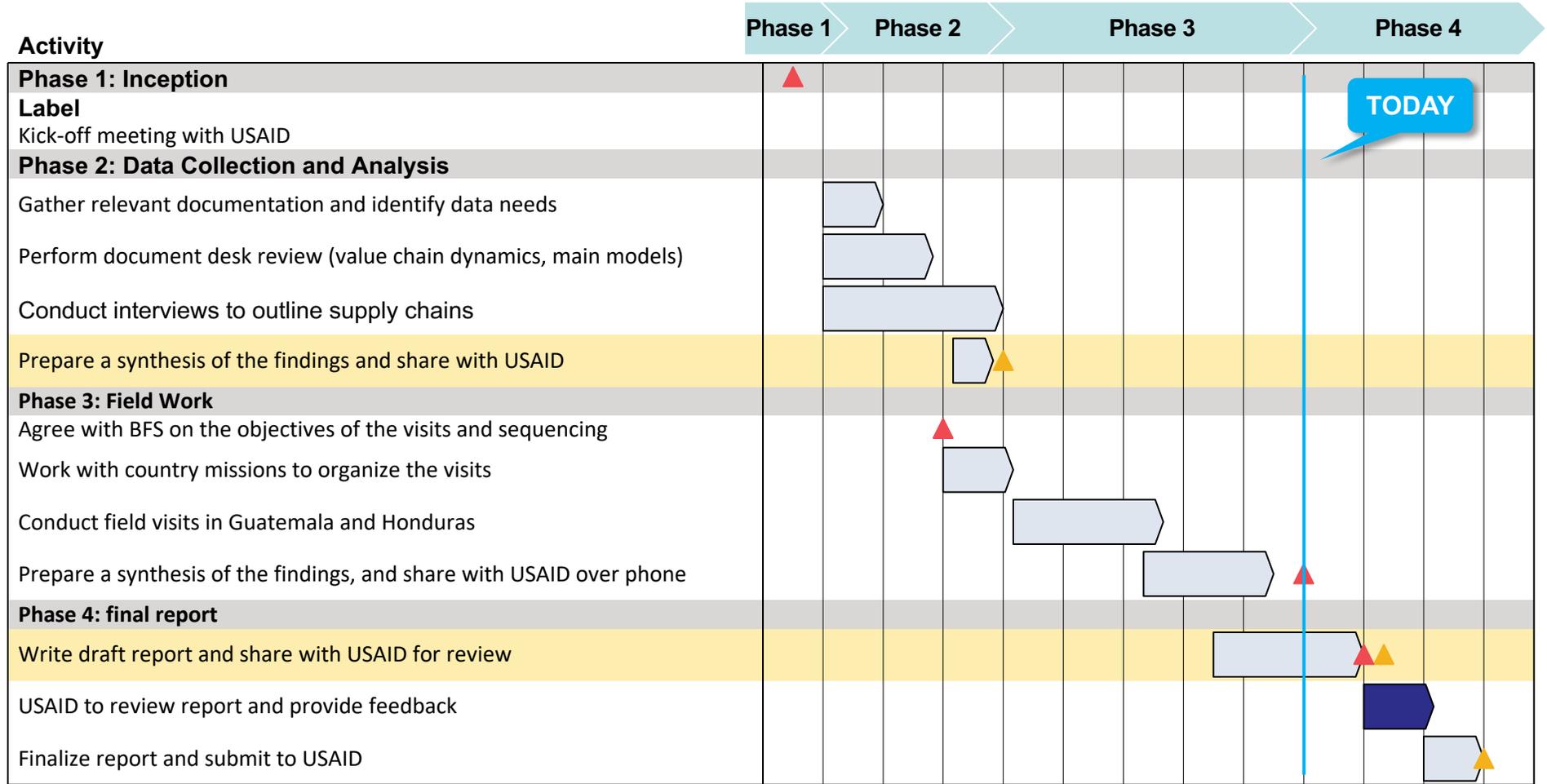
### What this engagement will cover:

- ✓ **Landscaping of relevant PRM models** that could be relevant smallholder farmers, including those who belong or not to producer organizations and models led by private sector actors, social organizations, or governments<sup>1</sup>
- ✓ **High-level mapping of supply chains** for cocoa and coffee in the 11 priority countries<sup>2</sup>
- ✓ **Identification of PRM models used** by stakeholders along the supply chain
- ✓ **Deep-dive of PRM in Guatemala & Honduras**, including their use, gaps, and opportunities
- ✓ **Recommendations to implement findings** of this study – with a particular focus on Guatemala and Honduras.

### What this engagement will NOT cover:

- ❑ **Study the use of PRM models** by large agro-industry players
- ❑ **Create comprehensive supply-chain maps** of cacao and coffee
- ❑ **Study other factors that hinder farmers' incomes** (e.g., use of the wrong inputs, bad agronomic practices)
- ❑ **Design and structure PRM tools**, such as futures for farmers to mitigate risks

# We've finalized our desk research and field visits and have been working to identify potential solutions for Honduras and Guatemala



- ▬ Dalberg team work
- ▬ USAID team review
- ▲ Key meetings
- ▲ Deliverables

# This deliverable summarizes the key findings for Honduras and Guatemala and outlines potential interventions for both countries

## KEY RESEARCH QUESTIONS FOR THE FIELD VISITS

1. **What is the structure of the coffee value chain** in Honduras and Guatemala?
2. **Who are the key players** in the value chain and what are the drivers of their actions?
3. **What are the main challenges smallholder coffee farmers** face in Honduras and Guatemala?
4. **How are prices formed** in the coffee value chain in Honduras and Guatemala?
5. **Are PRMMs being used in country?** If no, why not? If yes, what mechanisms are used by different players in the value chain? Which of those protect farmers from price volatility?
6. What **other PRMM have been used or tested** in the country? Why were these PRMM unsuccessful or not implemented?
7. **What are promising models and opportunity areas** for potential interventions?

# For our research in Honduras and Guatemala, we engaged with 77 different stakeholders

## GUATEMALA



**20**  
Smallholder farmers



**2**  
Large coffee producers



**4** First-tier coops  
**6** Second-tier coops



**2**  
Intermediaries



**4**  
Exporters



**3**  
Support organizations<sup>1</sup>

## HONDURAS



**13**  
Smallholder farmers



**2**  
Large coffee producers



**8** Cooperatives  
**4** Farmer groups



**2**  
Intermediaries



**3**  
Exporters



**4**  
Support organizations<sup>2</sup>

In both countries we interviewed a mix of exporters, including the largest in country, medium-sized, and specialty coffee exporters

Some farmers and intermediaries and exporters interviewed also roast coffee, but sell it mostly on the domestic market

Support organizations include technical assistance NGOs (e.g., TechnoServe), banks, Coffee Associations (e.g., IHCAFE)

Notes: 1. Support organization in Guatemala were: ANACAFE – the National Association of Coffee Growers of Guatemala created by Presidential decree; Neumann Foundation – Foundation from the Neumann group in charge of strengthening the coffee sector through a suite of services; and Banrural – the largest rural bank in Guatemala. 2. In Honduras we met with: IHCAFE – national coffee association of the coffee sector, Banco de Occidente – important bank with rural presence in Honduras, Technoserve – international nonprofit that promotes business solutions to poverty, and Swisscontact – Swiss Foundation for technical cooperation.

## Definitions that might be helpful as you read this document (1/2)

Term	Definition
<i>Stages of coffee</i>	
Cherry	The fruit of the coffee tree as it is initially harvested, composed of a coffee bean surrounded by a thick, bitter and red coating
Wet parchment	Coffee as it is referred to once the cherry bean has been 'wet processed' (i.e., the fruit covering the seed/bean is removed)
Dry parchment	Coffee as it is referred to once the cherry bean has been 'wet processed' and the resulting beans have been dried
Green coffee	Coffee as it is referred to when it is ready for export/ roasting, once it has been threshed to remove all the parchment shell
Conversions between stages	To go from dried cherry to green bean multiply net weight of cherry by 0.5. To go from parchment to green bean, multiply net weight by 0.8
Quintal	A unit of weight equal to 100 lbs
Acronym	Meaning
SHF	Smallholder farmer. Defined as farmers with less than 10 hectares
NYCC	New York C Contract. This is the international benchmark for Arabica coffee set in the Intercontinental Commodity Exchange (ICE). The contract prices physical delivery of exchange-grade green beans, from one of 20 countries or origin in a licensed warehouse to one of several ports in the U.S. and Europe, with stated premiums / discounts for ports (e.g., NY and VA ports are par, Bremen/Hamburg, Antwerp and Barcelona delivery points are discounted 1.25 cents /lb) and origin (e.g., Honduras is par, Colombia 400 point premium). The price is defined as USD cents / lb of coffee. Contract size traded in NYSE: 37,500 lbs
OTCC	Over the counter contracts. OTCCs are private contracts that are traded between two parties without going through the commodities exchange or other intermediaries. OTCCs can be negotiated and customized to suit the exact risk and return needed by each party.
PRMM	Price risk management mechanism. Mechanisms design to mitigate the risk of price volatility in the market

## Definitions that might be helpful as you read this document (2/2)

Term	Definition
Long-term OTCCs	Multi-year agreements between supply chain actors which stipulate the volumes and / or price fixing mechanism for each transaction
Intermediate buyers	Any entity who buys directly from a producer. This could be mission-driven organizations (e.g. cooperatives), private formal and informal intermediary buyers, or exporter local buying hubs (e.g., warehouses in located in coffee regions owned and operated by large exporters such as OLAM or ECOM), among others
Subsequent buyers	Any entity who buys from an intermediate buyer. This could be exporters and second-tier cooperatives or roasters and importers in other countries
Fixed price	A set price per quintal of coffee which is independent from the NYCC price upon delivery. The price is stipulated in a contract and is negotiated between two parties (e.g., producer, intermediate buyer, subsequent buyer)
Maximum ceiling price	A maximum price per quintal of coffee, stipulated in a contract and negotiated between a producer and an intermediate buyer, or an intermediate buyer and a subsequent buyer
Minimum floor price	A minimum price per quintal of coffee, stipulated in a contract and negotiated between a producer and an intermediate buyer, or an intermediate buyer and a subsequent buyer
Differential	Is the value or degree of adjustment above (or below) the NYCC for the purchase or sale of coffee depending on its individual characteristics (quality/grade, place of origin, types of seeds and fertilizers used during production). In this case, we use differential for coffee in green beans, and not differential between different stages of processing.
Call option	A call option is a contract that gives the holder the right to purchase a given stock at a specific price within a designated period of time. Calls can be used by entities who want to profit from a rise in stock prices. Calls can also be used as an insurance. E.g., a coop can purchase a call option to protect itself against the risk of side-selling and with the call option ensure it is able to fulfill contracts with their buyers or by buyers to ensure they don't have to pay a very high price in a rising market
Put option	A put option is a contract that allows the holder to sell a given stock at a specific price within a designated period of time. Puts act as insurance allowing the owning entities to guarantee themselves minimum price floors. Put options can also be used by speculators to make profits in falling the coffee market.
Strike price	The price at which a put or call option can be exercised

# Agenda

Objectives for this document

**Guatemala Situation Assessment**

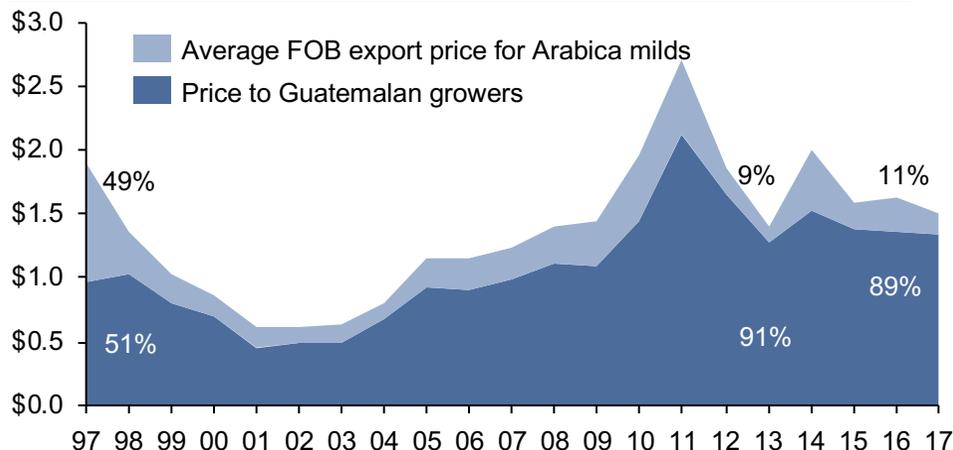
Honduras Situation Assessment

Potential Price Risk Management Models for Scaling

Annex

# In Guatemala, coffee is a source of livelihood for over 500,000 people and is generally positioned as a premium coffee origin

Average annual coffee price, and % of export price to SHF<sup>1</sup>  
USD per lb., 1997-2017



## ECONOMIC CONTEXT



Guatemala produced ~503 million coffee lbs. in 2017; representing 0.6% of GDP and 6.2% of agricultural GDP



Production fell 0.5% CAGR 1997 to 2017



Coffee represents 13% of total exports and 61% of agricultural exports



47% of coffee is produced by SHFs. It creates >500,000 direct and indirect jobs per year, the second largest employer in rural areas



## Premium coffee with low productivity

Guatemala has positioned its coffee as premium – 8 differentiated coffee brands are marketed from different regions - resulting in higher prices overall and high share of international prices being captured by farmers. The focus on high quality has led 80% of production to be high-quality, high altitude production<sup>2</sup>. 95% of coffee in Guatemala is Arabica.

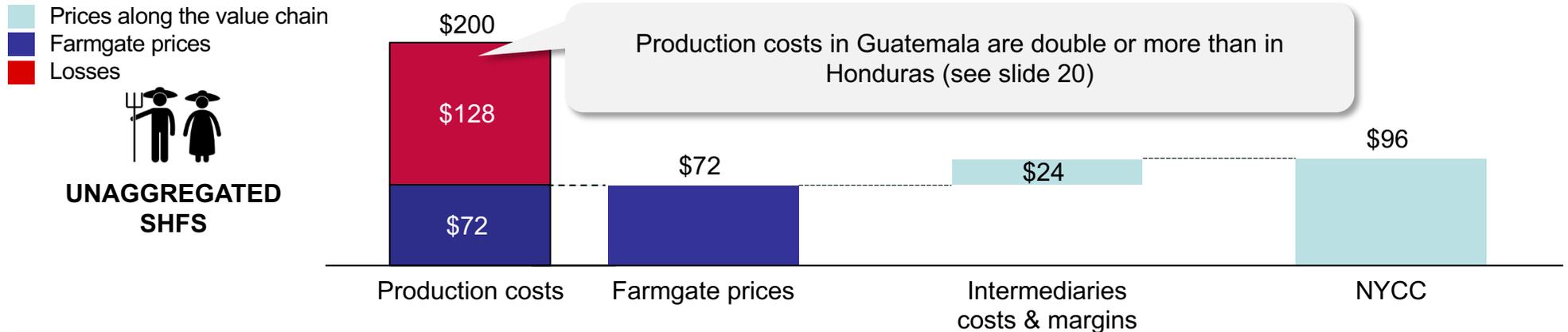
Despite these efforts, coffee profitability continues to suffer from low international coffee prices, a strong quetzal, and low productivity, resulting from low mechanization.

Even without these structural challenges, not all farmers receive a quality premium, either because they sell to intermediaries in cherry who do not differentiate for quality or because they, or the coops they sell to, have limited capacity to access premium markets.

# At current prices, most farmers in Guatemala are selling at a loss, reducing their ability to bear the cost of using PRMMs

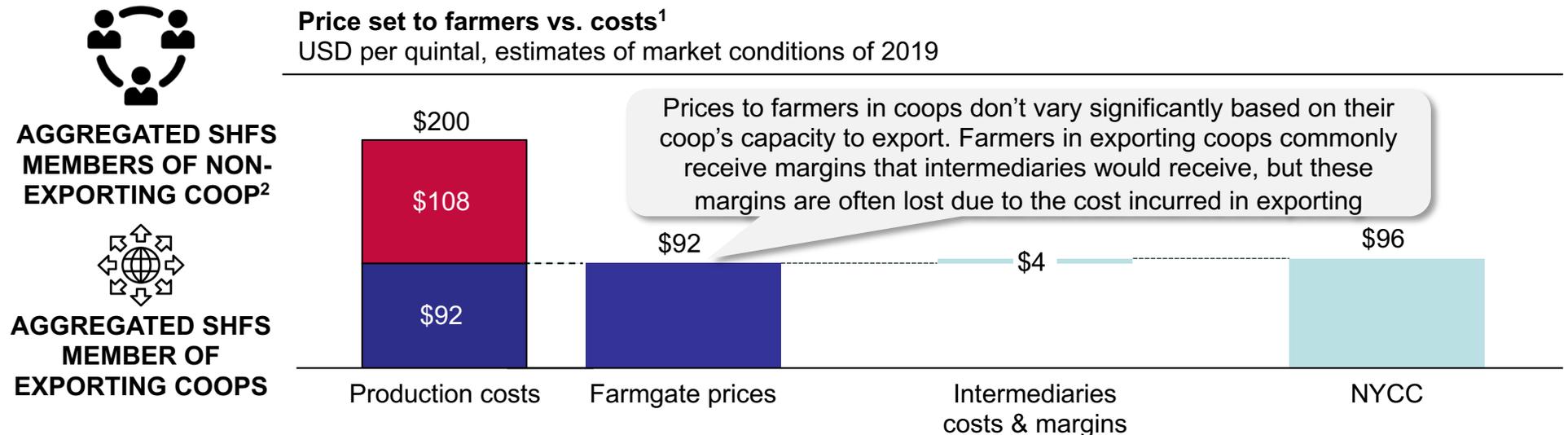
## Price set to farmers vs. costs

USD per quintal, estimates of market conditions of 2019



## Price set to farmers vs. costs<sup>1</sup>

USD per quintal, estimates of market conditions of 2019

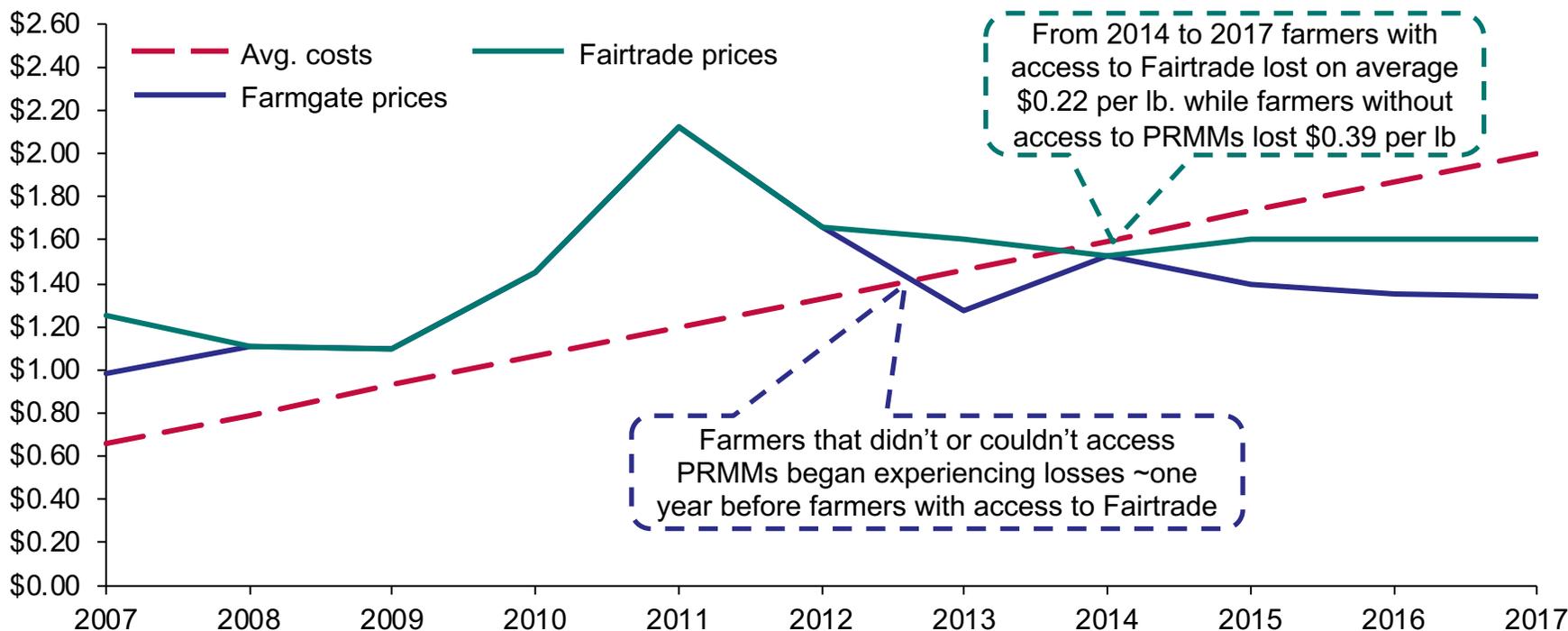


Notes: 1. SHFs in coops can also receive premiums for certificates, which usually add USD 6-13 per quintal to the price they receive and are sold at a higher price in international markets. Coffee produced under certified conditions is sometimes not sold under certified conditions, resulting in no premium. 2. Production costs do not include cooperative membership fees.

Sources: Technoserve, USDA, ANACAFE, FEDECOCAGUA, ICO, and Dalberg analysis

# The prolonged fall in international coffee prices has reduced the effectiveness of PRMMs due to high production costs in Guatemala

Farmgate and Fairtrade prices vs. costs<sup>1</sup>  
USD per pound, 2013-2017



Today, PRMMs that offer a price floor that is significantly above Fairtrade – and above the \$2 estimated costs – are unlikely to be offered, as they’d require a counterpart willing to bear farmers’ losses. In present market conditions the most effective PRMMs are only available to farmers that sell high-quality or differentiated coffees and have a multiyear OTCC that establishes a high price. These cases are rare.

Notes: 1. Costs are calculated as linearly growing between 2007 and 2017, based on costs per lb. estimates of 2009 and 2019. This increase can be due to loss in productivity per hectare, aging coffee trees and increase in labor costs. 2. Fairtrade prices were estimated at: \$1.25 before 2009, \$1.40 between 2009 and 2011 and \$1.60 after 2011. These prices equal Fairtrade prices of the time when NYCC price was below, and equal to NYCC prices, whenever these were above. the price premium that must be set aside and invested in projects to improve quality of life is not taken into account, as it doesn't reach SHFs immediately.

# 97% of producers are smallholders who sell coffee through a fragmented value chain

## PRODUCER FEATURES



# of coffee SHFs **120,000** – 0.5% of global SHFs<sup>1</sup>

SHFs production % of total

**47%** total country production

**70-80%** of coffee passes through intermediaries.<sup>2</sup> Intermediaries receive all the coffee from SHFs not in coops, and part of the production of SHFs in coops - as coops can't sell all members' coffee and SHFs have an urgency for liquidity

Links to market



**High quality arabica.** 80% is produced in high altitudes and is certified as strictly hard beans, giving them a high consistency and special taste, which makes it generally more expensive. However, only a fraction of this value makes it back to the producers



**SHFs' access to finance is limited.** The few SHFs that have access to finance pay expensive fees (e.g., interest rates 18%-21% vs. 8% median for large farmers) and access it through informal channels like intermediaries who then force them to sell their coffee at a discount



## SUPPLY CHAIN FEATURES

**19% of SHFs are members of FEDECOCAGUA**, the largest second-tier cooperative in Guatemala

**Limited trust** in cooperatives and how they transfer wealth to producers are commonly quoted as the main reasons why SHFs are reluctant to join

**Limited good options in the local market** coupled with an urgency to sell, limits SHFs' bargaining power and reduces prices

**Little competition between local intermediaries** results in collusion on price setting, further limiting producer price realization

**85% of exports are made by ADEC**, an association of 33 exporters



## SUPPORT ACTOR FEATURES

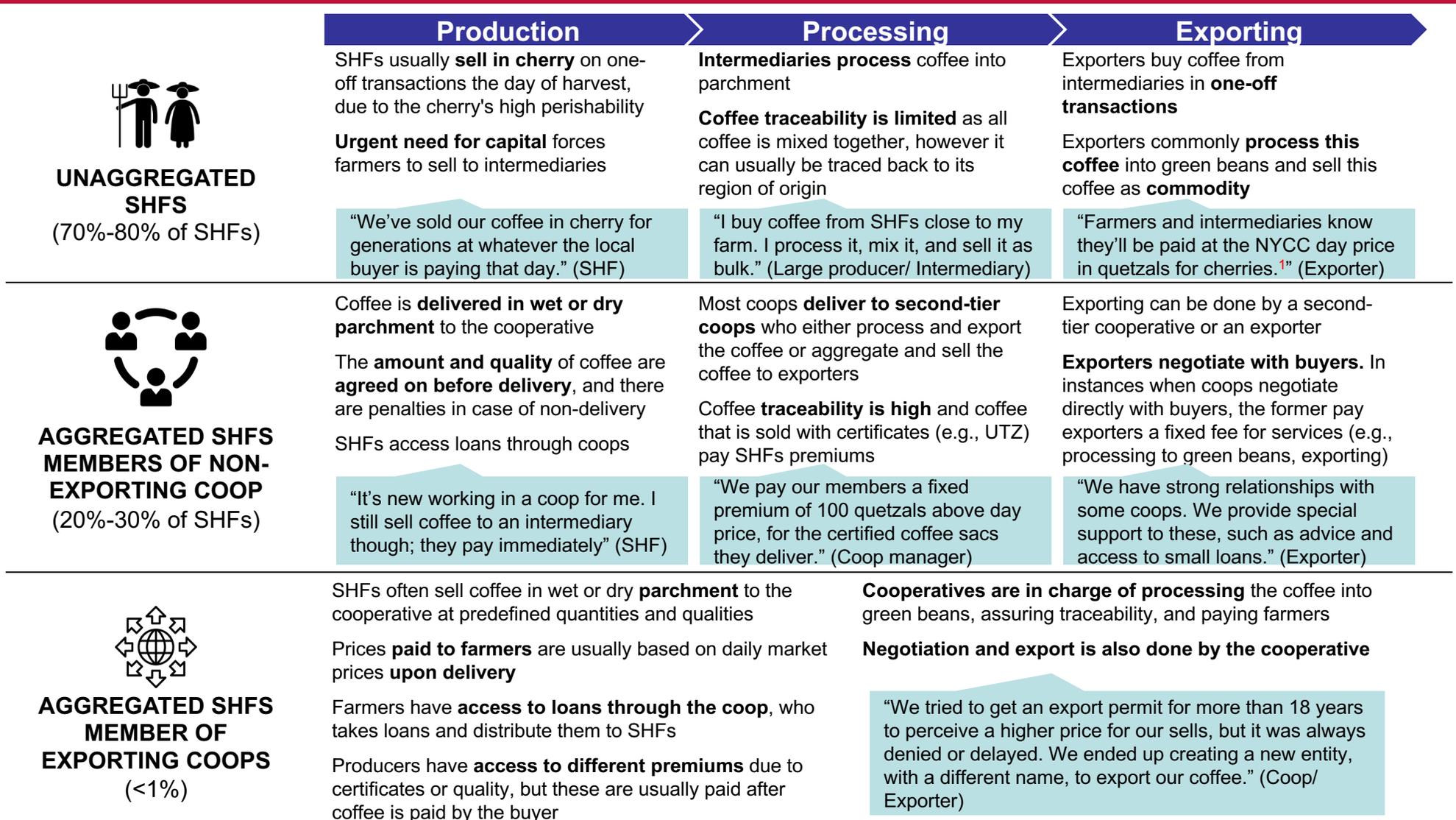


**Strong international marketing efforts** led by the National Coffee Association (ANACAFE) have successfully positioned **Guatemalan coffee as a premium product**. ANACAFE is also responsible for providing extension services and advising on national policies, both areas where national players recognize room for improvement.

Note: 1. Assuming a global SHF population of 20 million – The number of farmers globally is high level estimate, since numbers vary significantly. 2. Intermediaries are defined as everyone not in a Coop. Though there are large buyers in country, these commonly buy from intermediaries who pick up the coffee in cherry from farmers.

Sources: Technoserve, USDA, ANACAFE, FEDECOCAGUA, ICO, Banrural, and Dalberg analysis

# Guatemalan SHFs commercialize coffee through three main channels; large intermediaries have a lot of power in the market



Notes: 1. This means that farmers and buyers use an exchange rate of 1:1. For example, this means that if NYCC day price is at USD96, farmers will be paid Quetzals 96 for their coffee.

# Unaggregated SHFs tend to get lower prices, are exposed to greater price risk, and are unlikely to access premium coffee markets



## UNAGGREGATED SHFs (70%-80% of SHFs)

### HIGH URGENCY TO SELL AND NO TRACEABILITY OF COFFEE

**Access to finance:** **Low** most common source of loans are intermediaries

**Processing capacity:** **Low** sells coffee in cherry

**Sells to:** **Intermediaries**

**Price perceived:**<sup>1</sup> ~\$72 per quintal

*“When we cut the coffee we go straight to the local buyer and he buys it and pays immediately. Sometimes they even support us with credits before delivery. We have been working like this for ever, and it was a great business when prices were better! But today, it’s just not good.”*



## AGGREGATED SHFs MEMBERS OF NON-EXPORTING COOP (20%-30% of SHFs)

### HIGH TRACEABILITY OF COFFEE WITH SOME ACCESS TO PREMIUMS

**Access to finance:** **Low** common source of loans are coops, that provide loans at high interest rates

**Processing capacity:** **Medium** commonly deliver coffee in parchment

**Sells to:** **First-tier cooperative**

**Price received:**<sup>1</sup> ~\$91 per quintal

*“We always agree beforehand with the cooperative how much coffee we are going to deliver, but we never set a price. The price is defined the week we deliver the coffee, and the cooperative buys is as long as it abides to the quality and quantity agreed.”*



## AGGREGATED SHFs MEMBER OF EXPORTING COOPS (<1%)

### IMPROVED ACCESS TO PREMIUMS

**Access to finance:** **Low** most common source of loans are coops at high interests

**Processing capacity:** **Medium** SHFs commonly process into parchment

**Sells to:** **Exporting cooperative**

**Price received:**<sup>1</sup> ~\$91 per quintal

*“We have been growing our cooperative slowly. Now we have the capacity to process all our coffee and export it directly. Our buyer has been key as they’ve given us constant support and credits to continue growing.”*

# Most support programs for farmers are focused on increasing farmer resilience; some farmers in coops have access to OTCCs

## PRMMs and enablers used in the Guatemala coffee value chain (non-exhaustive)<sup>1</sup>

MODELS	PRODUCERS	SUPPLY-CHAIN ACTORS	SUPPORT ACTORS
<p><b>Enablers</b></p>	<ul style="list-style-type: none"> <li>• <b>Premiumization</b> – Most farmers produce high quality coffee sold at a premium in international markets (80% of exports are strictly hard beans<sup>2</sup>). However this value doesn't always reach SHFs, staying with intermediaries</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Cooperative support</b> – Coops provide financing, certification, TA, and inputs</li> <li>• <b>Trace the origin</b> – Exporters can trace coffee to its region of origin; allows exporters to pay quality premiums</li> <li>• <b>Supply aggregation</b> – Coops use economies of scale to reduce transaction and marketing costs and offer price above market to members</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Positioning of country brand</b> – ANACAFE has successfully placed Guatemalan coffee as a high-quality product</li> </ul>
<p><b>Increase flexibility of when to sell coffee</b></p>	<ul style="list-style-type: none"> <li>• <b>Warehousing</b> – Some farmers use warehouses owned by intermediaries or exporters to delay the time of sale until prices rise. Used seldomly.</li> </ul>		
<p><b>Reallocate risk across actors</b></p>		<div style="border: 1px dashed black; padding: 5px;"> <ul style="list-style-type: none"> <li>• <b>OTC contracts</b> – Some producer organizations (e.g., ACODIHUE) have established multiple year buying agreements at fixed prices</li> <li>• <b>Derivatives</b> - Large cooperatives use derivatives to hedge their risk. Coops owned by SHFs can channel benefits of derivatives more directly to SHFs than coops owned by other players</li> </ul> </div>	<p style="text-align: right;"> <span style="background-color: #d9e1f2; padding: 2px 5px;">Enablers</span> <span style="background-color: #4db6ac; padding: 2px 5px; margin-left: 20px;">PRMMs</span> </p>

Notes: 1. We did not find examples of PRMMs that aggregate resources across actors in Guatemala. 2. Strictly hard beans is a rating for coffee quality. This rating refers to coffee grown at altitudes higher than about 4,500 feet above sea level, making them high quality, more desirable, and generally more expensive than coffees grown at lower elevations. 2. ACODIHUE buys call options to hedge the risk it takes by offering farmers above market prices. Sources: Technoserve, USDA, ANACAFE, FEDECOCAGUA, ICO, and Dalberg analysis

# Price risk management strategies used in Guatemala only reach large or aggregated farmers

## IMPLICATIONS ON PRICE RISK MITIGATION

### PRODUCER

#### Unaggregated SHFs

- Do not have access to PRMMs, as they entirely depend on intermediaries that do not provide PRMMs
- Lack of access to finance and processing capacity are the main factors that make SHFs dependent on intermediaries

#### Aggregated SHFs

- Aggregated SHFs' main route for price support are the minimum prices and premiums paid by some producer groups that use economies of scale to reduce transaction and marketing costs and offer higher prices to farmers
- Some farmers benefit from have access to price floors & ceilings through agreements with buyers. For example, first-tier cooperative Nueva Esperanza del Bosque in Santa Rosa sells directly to a buyer since 2004, with whom they agree to a min and max price for each year, which they pass through to member SHFs

### SUPPLY- CHAIN

#### Non-sophisticated groups

- Mainly rely on premiums from certificates to protect farmers from price volatility

#### Sophisticated groups

- Some provide fixed price contracts that define a price for multiple years. For example, Nespresso negotiates fixed price contracts to ensure it procures its high-quality coffee from producers in Huehuetenango
- Second-tier cooperatives use back-to-back sales, which means they hold coffee for as short time as possible, commonly buying it after they have sold it to reduce the risk of changing prices as much as possible. For example, FEDECOCAGUA uses this strategy by first negotiating with buyers and then procuring the negotiated coffee from its broad portfolio of member cooperatives. This does not provide benefits to farmers

#### Exporters

- Derivatives are generally used by exporters to hedge their physical position

### SUPPORT ACTORS

#### ANACAFE

- Does not offer protection against price volatility; it cannot use market based strategies for SHF (e.g., derivatives) because it does not trade coffee

#### Credit providers

- Commercial banks are reluctant to lend to SHFs due to lack of credit history and collaterals

# Agenda

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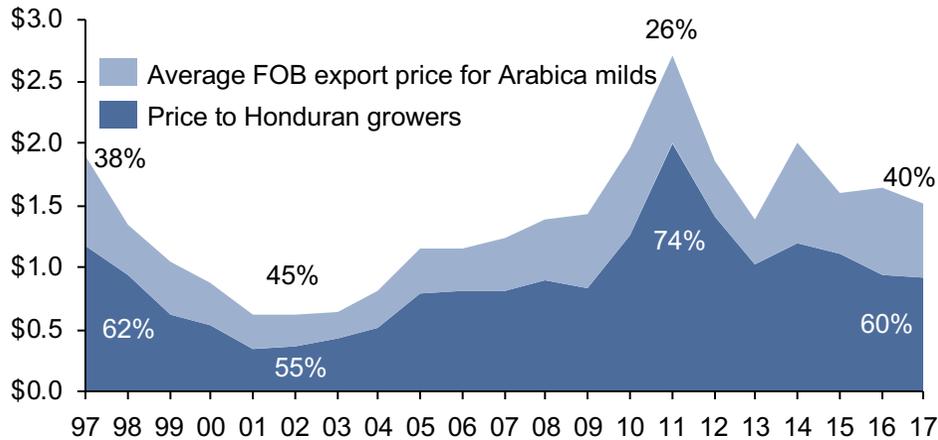
**Honduras Situation Assessment**

Potential Price Risk Management Models for Scaling

Annex

# In Honduras, coffee employs ~1M people and the majority is sold as bulk commodity coffee at low prices, regardless of its actual quality

Average annual coffee price, and % of export price to SHF<sup>1</sup> USD per lb., 1997-2017



## ECONOMIC CONTEXT



In 2017, Honduras produced 7.3 million bags of coffee, making it the 5<sup>th</sup> largest producer globally. Coffee represents 4% of GDP



Production increased 6.4% CAGR between 1997-2017



In 2018, coffee represented 13% of total exports and 61% of agricultural exports



Coffee creates ~1 million direct and indirect jobs per year, and 95% of coffee producers are SHFs



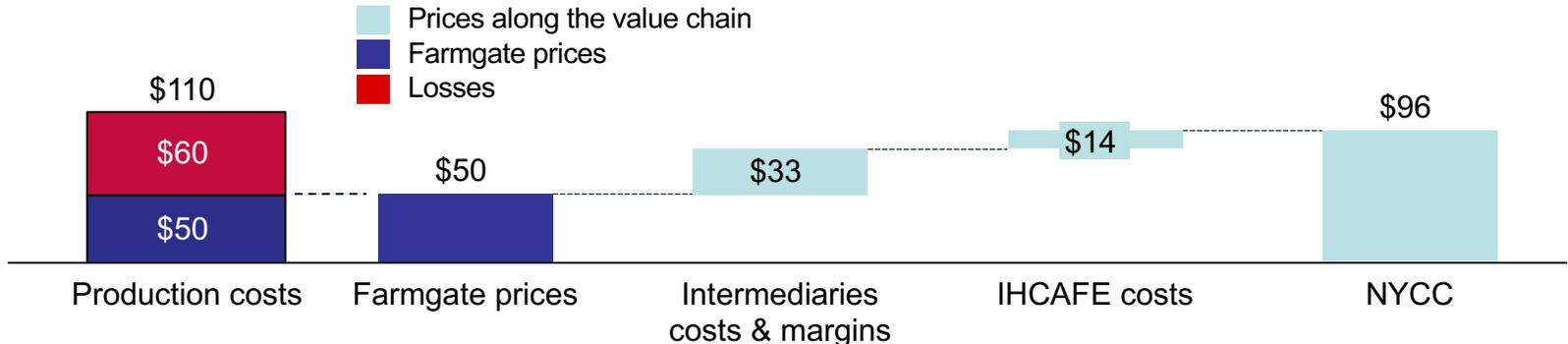
## Innovation for high quality and recovery from rust

Honduras produces 100% arabica and while about a third of the coffee produced is premium quality, only 20% is sold as such. due to limited brand recognition of Honduran coffee in international markets and poor traceability along the value chain. This lack of traceability makes it difficult for buyers to ensure where the coffee is coming from and how it is processed in country.

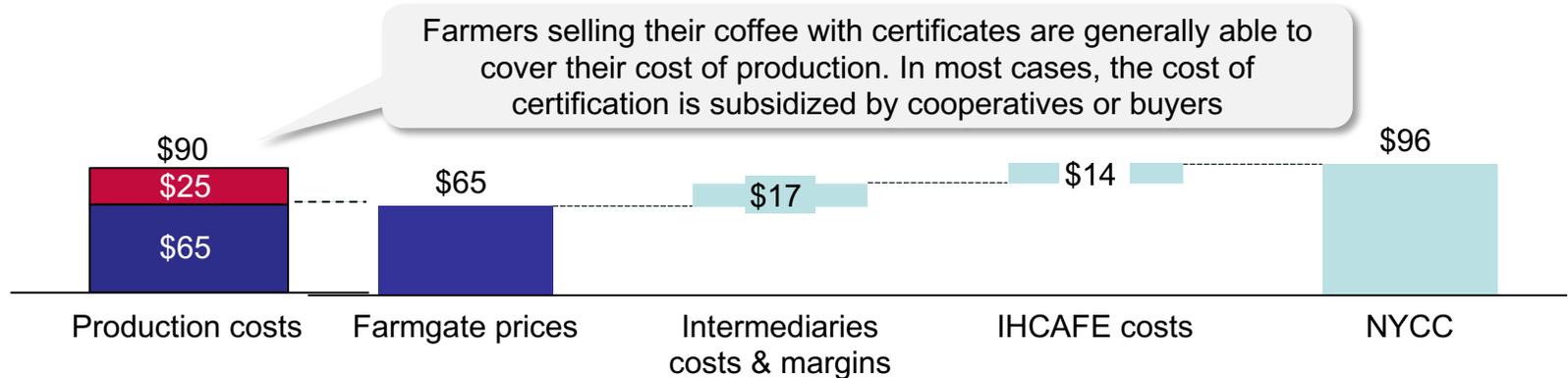
Coffee producers are also facing increased costs to prevent rust, and do not have access to credit to invest in preventive measures. Many coffee producers are already in debt from loans for planting, renovation and maintenance contracted in previous harvests.

**At current prices, aggregated SHFs are operating at a loss or breaking even - many farmer groups do not implement long-term price risk management strategies to prepare for periods of low prices.**

**Price set to farmers vs. costs, in Honduras**  
 USD per quintal, estimates of market conditions of 2019



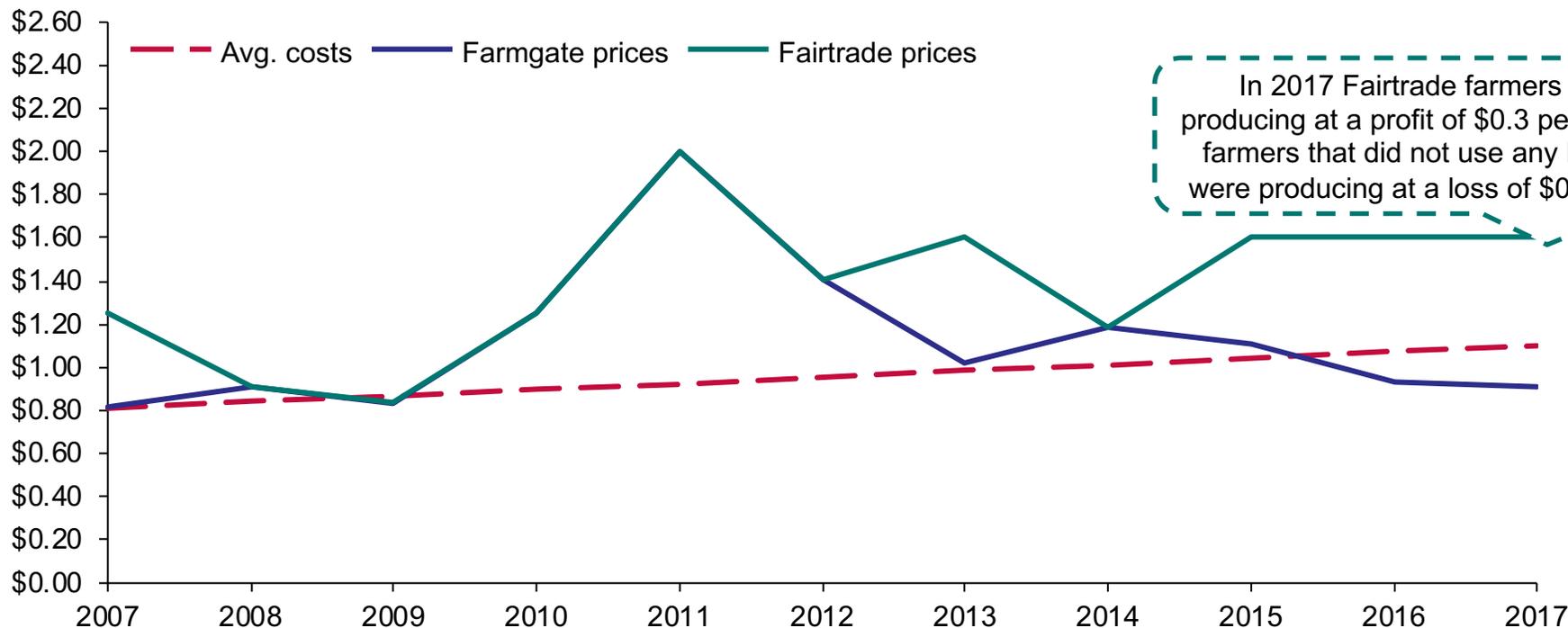
**Price set to farmers vs. costs,<sup>1</sup> in Honduras**  
 USD per quintal, estimates of market conditions of 2019



Notes. 1. Production costs do not include cooperative membership fees. Sources: USAID, IHCAFE, stakeholder interviews, and Dalberg analysis

# PRMMs can help farmers avoid loss, as is the case of farmers who can sell their produce at Fairtrade prices

Farmgate and Fairtrade prices vs. costs<sup>1</sup>  
USD per pound, 2013-2017



In Honduras PRMMs can have a significant effect on farmers' livelihoods, as they can make the difference for a farmer from producing at a loss to being profitable. More specifically, Honduras' efforts to reduce costs and increase yield (e.g., by investing strongly to fight coffee Rust and renovate coffee trees) has increased farmers' resiliency and PRMMs' effectiveness.

Notes: 1. Costs are calculated as linearly growing between 2007 and 2017, based on costs per lb. estimates of 2007 and 2019. This increase can be due to loss in productivity per hectare, aging coffee trees and inflation. 2. Fairtrade prices were estimated at: \$1.25 before 2009, \$1.40 between 2009 and 2011 and \$1.60 after 2011. These prices equal Fairtrade prices of the time when NYCC price was below, and equal to NYCC prices, whenever these were above. the price premium that must be set aside and invested in projects to improve quality of life is not taken into account, as it doesn't reach SHFs immediately.

# Around 95% of producers are SHFs, 85% are not aggregated, and there is little direct support from national institutions

## PRODUCER FEATURES



# of SHFs

**100,000** – 0.5% of global SHFs<sup>1</sup>, and 95% of all producers in the country

SHFs production % of total

**64%** of total country production

Links to market

**85% SHFs operate in loose VCs** and sell coffee cherries to local intermediaries who sell it to wet mills

**100% is arabica.** 33% of production is high quality coffee, while the rest is commodity level. Only ~20% is sold with a quality premium, mainly due to limited recognition of Honduran coffee as having high quality and poor traceability



**Specialty coffee** exports increased by 145% compared to 2017, and is produced mainly by SHFs associated to cooperatives



**Intermediaries are main source of credit** for most SHFs, because farmers do not meet standard loan requirements



IHCAFE conducts research and development to improve productivity of coffee growers in the country. However, with few extension workers (e.g., in Copan there is 1 extension worker for 3,000 farmers), **most producers perceive little support from IHCAFE.** IHCAFE collects ~\$13 per every quintal of coffee exported, which is subtracted from the price farmers receive; of these \$9 go to repay debts, farmers who have paid their loans are given back their \$9/quintal

## SUPPLY CHAIN FEATURES



**15%** of SHFs are aggregated to cooperatives. There are several Honduran coffee cooperatives that are sophisticated and well organized, with a good understanding of PRMMs

**Local intermediaries compete** to purchase coffee, leading SHFs to sell to whoever provides the best terms. Intermediaries mix different quality coffees, hindering the capacity to get quality price premiums



**10 international exporters** export ~80% of coffee, with Compañía Hondureña del Café accounting for almost 30% of exports

These international exporters are vertically integrated, and own dry and wet mills – meaning they take coffee from cherry to green, after buying it from intermediaries

## SUPPORT ACTOR FEATURES

# Unaggregated SHFs depend on intermediaries and have no bargaining power; aggregated ones benefit from better prices and direct support



## UNAGGREGATED SHFs (85% of SHFs)

### Production

- SHFs sell coffee in cherry the day of harvest
- SHFs do not have processing capacity to add value to their coffee
- SHFs are forced to sell to intermediaries that lent money for the harvest, and accumulate debts over multiple years, locking them in

“We would need at least one dryer in our municipality to add a bit of value to our coffee” (SHFs, El Paraiso)

### Processing

- Intermediaries process coffee from cherry to parchment
- Intermediaries sell conventional coffee at the price imposed by exporters
- Bean traceability is limited as coffees from different farms and qualities are mixed together

“Intermediaries do not differentiate for quality, and pay the same price for all the coffee they buy” (SHF, Marcala)

### Exporting

- Exporters buy large volumes from intermediaries in one-off transactions (intermediaries are the only players that can supply the large volumes required)
- Exporters process coffee into green beans and sell it as commodity at international market prices

“The 3-4 biggest exporters disrupt the market. They buy enormous volumes, from anyone, regardless of quality, at low prices, and do not offer long-term contracts” (Exporter)



## SHFs AGGREGATED IN PRODUCER GROUPS (15% of SHFs)

- Coffee is sold in cherry or wet parchment to the group
- The amount of the coffee delivered is not predefined, but quality standards are rigorously applied
- Liquidity need is still high but they can have access to loans through the group
- Producers commonly benefit from premiums for certificates or quality, paid after coffee is paid by the buyer

“We started BANCOSA to support our members with financing, but we do not have enough resources to address all the demand” (Producer group)

- Groups process coffee into dry parchment and assess the quality
- Groups can deliver to exporters or to importers/ buyers with whom they have direct relationships
- Coffee traceability is high, and farmers that supply coffee with certificates (e.g., UTZ, Fair Trade) receive a premium after harvest. ~25% of exported coffee is exported under a certificate. However, some groups find it difficult to access specialty coffee markets

“We invested a lot in building direct relationship with buyers, we go to many international fairs. This is crucial to obtain good prices” (Producer group)

- For groups that sell directly to importers/ buyers, exporters only provide logistical services, in some cases they offer access to financial derivatives at a fee
- Export costs are high, and it is difficult for a group to set up an export facility
- Overall, an average costs to get coffee from cherry to export is \$20/qq<sup>1</sup>, higher than other countries in the region . Producers also pay \$13/qq to IHCAFE when coffee is exported

“Exporting coffee from Honduras is expensive. The cost of preparing coffee for export is ~\$20/qq, compared to \$4 /qq in Brazil” (Exporter)

# The main challenges for all producers are lack of access to finance, limited processing capacity, and difficulty in accessing markets



## UNAGGREGATED SHFs (85% of SHFs)

### HIGH URGENCY TO SELL AND DEPENDENCE ON INTERMEDIARIES

**Access to finance:** **Low**, SHFs urgently need liquidity to produce, but their most common source of loans are intermediaries, with extremely high interest rates (~60%/ year), compared to ~14% for commercial loans in the agriculture sector

**Processing capacity:** **Low** commonly sells coffee in cherry

**Access to market:** **Low**, do not have capacity or resources to access multiple buyers

**Sells to:** Intermediaries

**Price received:**<sup>1</sup> ~\$50 per quintal

*“We are forced to sell at whatever price the intermediary offers because that is our only option. But we always say that ‘having one bird in your hands has more value than 100 flying birds’ ” (SHF, El Paraiso)*

*“Intermediaries are the most important players in the value chain. Many do not care about the needs of farmers, and do not differentiate for quality, but they are a necessary evil” (Banco de Occidente)*

*“We have no control over prices, and we are further penalized by unfair weighting systems and humidity calculations” (SHF, El Paraiso)*



## SHFs AGGREGATED IN PRODUCER GROUPS (15% of SHFs)

### ACCESS TO FINANCE AND PRICE PREMIUMS

**Access to finance:** **Low**, liquidity urgency remains, but the most common source of loans are groups, at commercial interest rates

**Processing capacity:** **Medium**, SHFs commonly deliver coffee in cherry or wet parchment, and the group completes the processing

**Access to market:** **Medium**, groups can have direct relationships with buyers, particularly important for specialty coffee, but still struggle to sell all the production at a premium

**Sells to:** First-tier and/or exporting producer group

**Price received:**<sup>1</sup> ~\$65/70 per quintal

*“Financing is the backbone of the industry, but also producers’ greatest challenge” (Aruco, producer group)*

*“Before joining this cooperative, I was being exploited by intermediaries. Now, I receive messages every day with the price the group is paying, and these are always higher than the local market prices” (SHF at COMSA)*

*“We have been investing a lot in quality and specialty coffee, and in building direct relationships with buyers. The price differentials we obtain from high quality coffees and certification allow us to offer a minimum price to all the producers in our group” (COMSA, producer group)*

# Moreover, most PRMMs used in the country benefit only aggregated farmers, leaving the majority of farmers unprotected

PRMMs and enablers used in the Honduras coffee value chain (non-exhaustive)<sup>1</sup>

Enablers

PRMMs

MODELS	PRODUCERS	SUPPLY-CHAIN ACTORS	SUPPORT ACTORS
<p><b>Enablers: Increase farmer resilience</b></p>	<ul style="list-style-type: none"> <li>• <b>Rehabilitation &amp; diversification support</b> – IHCAFE provides funds and technical support for farmers to renovate their trees and diversify their income activities</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Productivity</b> - Cooperatives and farmer groups (e.g., Cafico, COMSA) provide TA and financing to their members</li> <li>• <b>Supply aggregation</b> - Cooperatives and farmer groups use economies of scale to reduce transaction and marketing costs and offer price above market to members</li> <li>• <b>Market price discovery mechanisms:</b> online platform Algrano.com puts producers and buyers in contact and producers set their own prices</li> <li>• <b>Price information</b> - COMSA shares daily prices on WhatsApp</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Premiumization</b> – IHCAFE’s strategy seeks to position the country as a leader in the specialty coffee segment</li> <li>• <b>Financing</b>- IHCAFE provided financing to recover from the rust epidemic (through the fideicomiso), but does not provide financing as needed every year to farmers</li> <li>• <b>Price information</b> – IHCAFE publishes real time, up to date information on NYCC market prices</li> </ul>
<p><b>Increase flexibility of when to sell coffee</b></p>	<ul style="list-style-type: none"> <li>• <b>Warehousing</b> – Some farmers use warehouses owned by intermediaries or exporters to delay the time of sale until prices rise. Used seldomly.</li> </ul>		
<p><b>Reallocate risk using financial markets</b></p>	<p>Sophisticated groups are able to access comprehensive PRMMs involving complex financial mechanisms</p>	<ul style="list-style-type: none"> <li>• <b>OTC contracts</b> - Sustainable Harvest (SH) price-to-be-fixed + options, initiatives where cooperatives can purchase call options through a SH account</li> <li>• <b>Derivatives</b> - Oikocredit-MIF PRM program to train cooperatives to integrate PRM and financial tools into their operations</li> <li>• <b>Derivatives</b> – Sophisticated cooperatives use derivatives to hedge risk for a small share of their coffee purchases. Often using exporters financial accounts at a fee</li> </ul>	

Sources: 1. We did not find examples of PRMMs aggregating resources to protect farmers against price risk. USDA Gain report 2018, GCP, “Honduras - economic viability of coffee farming”, 2017; CONACAFE & INHCAFE websites, Stakeholder interviews; Dalberg analysis.

# Unaggregated SHFs do not have access to PRMMs, and aggregated ones depend on their groups' strategies for protection

## IMPLICATIONS ON PRICE RISK MITIGATION

### PRODUCER

#### Unaggregated SHFs

- Do not have access to PRMMs, as they entirely depend on intermediaries that do not support them on this
- Lack of access to finance and processing capacity are the main factors that make SHFs dependent on intermediaries

#### Aggregated SHFs

- Aggregated SHFs' main route for price support are the minimum prices and premiums paid by some producer groups that use economies of scale to reduce transaction and marketing costs and offer higher prices to farmers
- Some cooperatives such as COMSA sell coffee under Fair Trade certificate conditions, benefiting from a minimum price of \$140/qq; however the demand for Fair Trade coffee is limited, and can't absorb all the supply - for example in 2012 only 60 of the 90 thousand quintals from COMSA were sold to Fairtrade buyers

### SUPPLY- CHAIN

#### Non-sophisticated groups

- Mainly rely on minimum prices and premiums from certificates to protect farmers from price volatility

#### Sophisticated groups

- Can implement sophisticated PRMMs, as they have sufficient liquidity, knowledge, economies of scale, and access to markets
- Some use derivatives for small shares of high quality coffee that have been negotiated (e.g., sold, negotiated a fixed price contract) to reduce side selling risk of producers

#### Exporters

- Hedge their price risk, but rarely transmit benefits directly to producers
- Are reluctant to stipulate long term contracts with producers due to risk of default

### SUPPORT ACTORS

#### IHCAFE

- Does not offer effective protection against price volatility and its price retention and redistribution mechanism lacks transparency and efficiency<sup>1</sup>

#### Credit providers

- Commercial banks are reluctant to lend to SHFs due to lack of credit history and collaterals
- Provide financing for fixed assets to groups based on the value of long term contracts

Notes: Retention and redistribution includes ~\$9 per quintal to repay loans given from the Fideicomiso. These \$9 are paid by exporters for every pound of coffee exported from Honduras. However, exporters pass through this cost to intermediaries, who pass it through to farmers. i.e., the price the exporter sets is based on the international reference FOB price, minus the \$9 it will have to pay to IHCAFE. Farmers who have paid back their loans, can then use the receipt for the coffee sold and get their \$9 per pound back from IHCAFE. Sources: Stakeholder interviews; Dalberg analysis.

# Agenda

Objectives for this document

Guatemala Situation Assessment

Honduras Situation Assessment

**Potential Price Risk Management Models for Scaling**

Annex

# We found interesting models in both countries that are worth scaling or replicating; there are also opportunities to test new PRMMs

PRMMs and enablers that could be scaled, replicated, or implemented (non-exhaustive)

Enablers

PRMMs

MODELS	Existing programs worth scaling/ replicating	Potential additional programs
Enablers: Increase farmer resilience	<ul style="list-style-type: none"> <li>• <b>Strengthening the value chain:</b> TNS's MAS Project groups farmers, establishes financing facilities with exporters and credit providers, and incentivizes use of long-term contracts</li> <li>• <b>Market price discovery mechanisms:</b> Online platform Algrano.com puts producers and buyers in contact and producers set their own prices. Currently used by farmer groups such as COMSA and COCAFELOL</li> <li>• <b>Aggregating production:</b> Coops (e.g., ACODIHUE and Cocafelol) and farmer groups (Aruco, Cafico, and COMSA) reduce transaction and marketing costs by reaching economies of scale. The group ensures price above market to all members and pays back a premium to high-quality producers once coffee is sold</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Price information:</b> Technoserve SMS bookkeeping that allows exporters to have a better overview of their available supply, used in Rwanda</li> </ul>
Resource aggregation across actors		<ul style="list-style-type: none"> <li>• <b>Price stabilization fund:</b> Colombia is implementing a Fondo de Estabilización de Precios del Café, to subsidize SHFs in times of low prices<sup>1</sup> While this program could reach most farmers, it has significant challenges including depleting scarce government resources and distorting markets</li> </ul>
Reallocate risk using financial markets	<ul style="list-style-type: none"> <li>• <b>OTC contracts:</b> Sustainable Harvest (SH) price-to-be-fixed + options, initiatives where cooperatives can purchase call options through a SH account, used by Aruco</li> <li>• <b>Derivatives:</b> Oikocredit-MIF PRM program to train cooperatives to integrate PRM and financial tools into their operations and policies</li> </ul>	

**Note:** A solution could contain multiple PRMMs integrated together. For example, a program to incentivize the use of OTC contracts can include a price discovery mechanism and access to finance facility.

# OTCCs appear to be the most promising long-term solution; other solutions may help under certain conditions

## Enablers for increased farmer resilience

## Aggregating resources

## Reallocate risk across actors

### 1 DIGITAL MARKETPLACES

### 2 SUPPLY AGGREGATION

### 3 STABILIZATION FUND<sup>3</sup>

### 4 OTCCs

	1 DIGITAL MARKETPLACES	2 SUPPLY AGGREGATION	3 STABILIZATION FUND <sup>3</sup>	4 OTCCs
<b>Description</b>	Provides a platform to connect coffee producers directly with buyers	Aggregates supply from different producers to provide higher prices	Smoothens farmers' income by saving in high prices and disbursing in low prices	Provides contracts that stabilize prices for farmers in future coffee sales
<b>Challenges targeted</b>	<ul style="list-style-type: none"> <li>Limited market access for high-quality coffee</li> <li>Producers of high quality coffee who don't receive quality premiums</li> <li>Local market with few buyers</li> </ul>	<ul style="list-style-type: none"> <li>Limited capacity to reach specialty markets</li> <li>High transaction and marketing costs</li> <li>Need for liquidity drives selling decision<sup>2</sup></li> </ul>	<ul style="list-style-type: none"> <li>Limited access of PRMS for farmers not in coops</li> <li>Dependence of aggregated farmers on their group's strategy for protection</li> </ul>	<ul style="list-style-type: none"> <li>Value chain players engage in short-term decision making, which increases their exposure to risk</li> <li>Producers do not benefit from hedging strategies</li> </ul>
<b>Potential impact<sup>1</sup></b>	<p><b>Low breadth:</b> High quality coffee</p> <p><b>Medium coverage:</b> Prices ideally depend on local fundamentals</p>	<p><b>Medium breadth:</b> Only aggregated SHFs</p> <p><b>Medium coverage:</b> ICE prices still used as a reference</p>	<p><b>High breadth:</b> Can reach most producers, in coops or not</p> <p><b>Medium coverage:</b> Expensive to maintain and fully cover risk</p>	<p><b>Medium breadth:</b> Requires a lot of collaboration across actors</p> <p><b>High coverage:</b> Can protect all players along the VC well</p>
<b>Execution feasibility</b>	<b>Feasible</b> , models already exist but require scaling	<b>Feasible</b> , models already exist but require strengthening	<b>Difficult</b> , requires coordination and significant govt. resources	<b>Feasible</b> , requires coordination of multiple players in VC
<b>Ideal conditions</b>	<ul style="list-style-type: none"> <li>Professionalization of SHF, including training to evaluate quality and value of coffee</li> <li>Access to financial services</li> <li>Strong rule of law to steward negotiations</li> </ul>	<ul style="list-style-type: none"> <li>Farmer aggregation</li> <li>Premiumization to increase price of coffee produced</li> </ul>	<ul style="list-style-type: none"> <li>Strong central government organization</li> <li>Sufficient govt. resources; support only transitory</li> <li>Access to financial services to disburse/ collect payments</li> </ul>	<ul style="list-style-type: none"> <li>Strong financial sector with counterparts that take risks</li> <li>Strong relationships to facilitate contract compliance</li> <li>OR strong rule of law to enforce contract terms</li> </ul>
<b>Potential risks</b>	<ul style="list-style-type: none"> <li>Counterparty risk from closed deals</li> <li>Difficult access to export services</li> </ul>	<ul style="list-style-type: none"> <li>Poorly managed farmer groups with little accountability</li> <li>Coops inability to access high-quality coffee at premiums</li> </ul>	<ul style="list-style-type: none"> <li>Diverting scarce government resources that could be used for other investments</li> <li>Distorting markets</li> </ul>	<ul style="list-style-type: none"> <li>Difficult learning curve</li> <li>Slow uptake of producers</li> </ul>

Notes: 1. Impact is defined as the number of farmers which can be reached with the intervention and the risk coverage it offers. 2. Coops are expected to enable credit access to SHFs. 3. This solution is only advisable if there are not alternatives that are more profitable than coffee - it is costly for governments, Sources: Interviews and Dalberg analysis

# Digital marketplaces can reduce farmers' price volatility and increase their perceived price – but market opportunities are often limited

## Relevant Farmer Segment:



Farmers with access to internet, access to coffee processing (i.e., access to means to process coffee into green), and production of high-quality coffee

## The Challenges:

- **Limited market access for high-quality coffee: Producers in Honduras and Guatemala often struggle to sell their high quality coffee in markets willing to pay stable and premium prices. For example, ACODIHUE only sells 20% of its high-quality coffee in the premium market and the rest at commodity prices** (which are directly linked to NYCC)
- **Limited price premia from high-quality markets reach SHF:** SHFs perceive little of the price stability and premiums high-quality markets provide. These benefits are commonly retained by intermediaries or lost in the value chain due to poor traceability and accessibility of unaggregated SHF to high-quality markets (see point above)

## Examples:

Algrano: Online platform where producers and cooperatives can connect directly with roasters. Producers in Guatemala and Honduras (e.g. COMSA) are already using it.

## How it improves farmer resilience

- Only partially decouples prices from the commodity exchanges by connecting producers and buyers directly and allowing them to negotiate prices based on the specific characteristics of the coffee, and local / regional price determinants<sup>1</sup>
- Increases farmers' power on price formation, enabling them to set prices and bid for lots
- Reaches more buyers, allowing SHFs to sell more of their high quality coffee at premium prices

## Additional services that the platform could provide

- **Quality competition:** Competitions that showcase the quality of coffee produced by SHFs on the platform to help SHFs increase their visibility and demand
- **Access to financial services:** Enable farmers to access digital financial services (DFS) to receive payments for their sales. DFS can also enable access to financing
- **Access to information:** The platform can be leveraged to disseminate relevant information to farmers, such as weather forecast, best agricultural practices, and foreign exchange rates. It can also serve to track quantities sold and prices.

1. Local or regional price determinants are mostly only relevant if there is a local or regional consumption market for the coffee – in that case, the coffee does not need to be eventually internationally traded and does not therefore need to have local prices tied to prevailing international prices. Sources: Expert interviews and Dalberg analysis

# A digital marketplace can operate as a one-stop-shop for farmers to sell their coffee

## Step-by-step

1. Farmers produce and process coffee into parchment
2. A sample is sent to a quality tasting center (either owned or certified by the platform) to determine quality
3. Lots are published on the marketplace through a **selling mechanism** chosen by the SHF (detailed on the right)
4. After the negotiation is closed and the buyer has paid, the lot is picked-up, processed into green, tested (to assure the farmer is delivering the offered quality), and exported by the marketplace or an exporter with processing capacity
5. The SHF is paid when the lot is shipped, deducting processing and transportation costs

## Spotlight: Avoiding side-selling

**The challenge:** Farmers have urgent needs for liquidity, which drives them to sell their coffee to stakeholders that can pay immediately

### **Potential solutions** (non-exhaustive)

- Providing financing or credit to farmers contingent on them selling their coffee through the platform
- Giving farmers a payment advancement for handing over their coffee to a warehouse and paying additional premiums after negotiations (i.e., a warehouse receipt system)

## Potential selling mechanisms

### Description

**Traditional auctions:** SHFs offer lots starting at a minimum price for a determined amount of time and buyers bid

**Reverse auctions:** Buyers post buying requests for lots with a determined quality and sellers bid to fulfill them

**Fixed price offerings:** SHFs post their coffee lot at a fixed price and it is sold to the first buyer willing to pay for it

**Fixed price demands:** Buyers post a fixed price request including the quantity and quality they are looking for and producers complete it on a first-come first-serve basis

### Ideal SHF<sup>1</sup>

**Exceptional** quality with **moderate** urgency for liquidity

**Moderate** urgency for liquidity looking for **assured** sell

**Moderate** urgency for liquidity, with desire to hold price power

**High** urgency for liquidity looking for **assured** sell

## Potential risks for SHF

- **Lots offered by some SHFs may be too small**, making them unattractive and costly to negotiate or transport
- **SHF post but do not sell** exposing them or the platform (if it is financing operations) to losses or liquidity crunches
- For models where farmers bid, **limited or variable connectivity** may reduce their competitiveness
- Coops or SHF groups that post on behalf of producers may **retain some benefits** that should reach SHFs
- **SHFs limited knowledge on pricing**, exposes them to risks such as setting a minimum price too low or high

# Digital marketplaces require farmers that produce high-quality coffee and have access to processing tools to make their coffee export ready

## KEY REQUIREMENTS

- **Processing capacity:** Farmers and/or farmer groups must have capacity to process their coffee into parchment in order to store the coffee
- **Well-functioning marketplace:** SHF and buyers' must be guaranteed access to a well-functioning system, with support to fix glitches
- **Internet access and literacy:** SHFs must have access to internet to sell their coffee and keep their offers up-to-date and digital literacy
- **Access to financial services:** SHF will require access to financial services to access working capital and receive online payments from buyers
- **Strong accountability mechanisms/ rule of law:** Requires a strong accountability mechanism to ensure coffee is delivered at the agreed quality and on time, and paid on time at the agreed price.

### Spotlight: Algrano.com

*Algrano.com* is an online platform where producers can sell their high-quality coffee directly to roasters. Producers register on the platform and share samples of their coffee with Algrano. Algrano shares the samples with roasters in Europe. Once a roaster agrees to buy coffee, Algrano buys the coffee from farmers and ships it to roasters, who pay against shipping documents.

## DONOR AND IFI'S POTENTIAL ROLES

- **Train farmers** on required tools such as processing, digital literacy, and preparing their coffee for export
- **Convene** digital solution providers, international buyers, and financial institutions to coffee competitions, pilot the platform, hone it, and scale it
- **Provide capital to fund existing** programs such as Algrano to improve and strengthen their platforms

## POTENTIAL PARTNERS

- **Anacafe & IHCAFE:** Can (i) financing to create or expand existing national / regional competitions, (ii) fund and promote the use of online platforms as part of the national marketing strategy, and (iii) provide knowledge of where high-quality coffee is produced to direct focus efforts
- **Existing platforms** (e.g., Algrano): Existing platforms that are being used locally can be leveraged to scale nation-wide
- **Exporters with processing capacity** (e.g., Dinamica, Green Planet): Can provide logistic services, processing ability (i.e., from parchment to green), and expertise of working with international buyers
- **Financial service providers:** Local banks (e.g., Banrural in Guatemala or Banco de Occidente in Honduras) and international institutions (e.g., Oikocredit, Root Capital) can support farmer groups in opening bank accounts and provide accessible credit
- **Local education institutions/ training providers** (e.g., Technoserve): can provide training and support to farmers on required skills to use the platform, practices for them to assess the quality of their coffee (e.g., coffee sommelier courses) and effectively carry-out negotiations through it

# Farmer groups can provide higher prices to farmers by aggregating production and reducing transaction and marketing costs

## Relevant Farmer Segment:



Aggregated farmers with some ability to produce differentiated coffees (see slide 33 for more details on successful aggregation models)

## The Challenge:

- **Limited access to differentiated markets:** Guatemalan and Honduran farmers produce a varied range of coffees, going from low quality Robusta to specialized micro-lots that sell at multiple times market price. Many unaggregated farmers sell high-quality coffee without a premium because they sell it to intermediaries at market price
- **Need for liquidity drives selling decision:** Liquidity need makes farmers (i) sell produce as soon as possible to whomever can pay the quickest, (ii) accept unfavorable loans with conditions such as obliging farmers to sell their produce at low prices or paying high interest rates

## Examples:

Well-functioning cooperatives or farmer groups are already using this mechanism effectively. These include ACODIHUE and ASDECAFE in Guatemala and COMSA, Cocafelol, Cafico, and Aruco in Honduras

## Step-by-step

- The farmer group aggregates coffee from members. To avoid side-selling due to liquidity needs, the cooperative can pay the farmer for their coffee upon delivery. The coop defines a price for all members above local farmgate market prices. The coop sets prices based on local market prices and the expected profits from selling high quality or certified coffee (e.g., COMSA sets its upfront price using a weighted average of local market prices and Fair Trade producers)
- The farmer group negotiates different contracts with buyers based on the qualities and types of coffees it received, assuring it can deliver the coffee negotiated (for longer-term relationships see solution 4, OTCCs)
- Post negotiation, farmer groups pay back a premium to farmers whose coffee was sold at high prices, discounting processing fees and the group's margins.

## How it improves farmer resilience

- **Farmer groups' profits are increased by achieving economies of scale and scope.** Reaching scale enables the group to reduce the cost of processing, marketing and selling each pound of coffee. Scale benefits can also improve coop's market power, to obtain higher prices – especially if they can guarantee a base level of volume. Scope benefits occur when aggregated volumes justify extending the services that the coop can do in-house (e.g. logistics). Improved costs and prices are then passed to members in higher-than-market prices. This does not necessarily lead to lower price risk.

# Producers' ability to produce different coffee types and qualities and coops' capacity to sell coffee as differentiated are key

## KEY REQUIREMENTS

- **Production of differentiated coffees:** Ensuring producers are providing different coffee types (e.g., micro-lots, organic certified, women produced) will help farmer groups reach different markets and have access to different prices to gain profits and offer prices above markets

Coops working with this PRMM highlighted that long-term relationships, trust between members and paying back premiums to specialty producers were key. Members recognized that there could be years where a few were supporting the group. However, they knew this could change in other years.

- **Direct access to premium markets:** Capacity to find and negotiate with buyers willing to pay high-quality premiums, including negotiating with people from different cultures and countries around the world
- **Well-functioning farmer groups:** Ensuring farmer groups are transparent, efficient, and farmer-centric is key in order to have them become more attractive to SHFs. This includes:
  - **Improving their management** as they lack capacity, skills, knowledge, and accountability
  - **Improving access to finance** in order for them to become more attractive to SHF
  - **Increasing farmer equity** to incentivize farmers to join

*Key requirement explored in more detail on the next page*

## DONOR AND IFI'S POTENTIAL ROLES

- **Support cooperatives** already offering higher prices and other services to farmers
- **Support efforts to increase accountability and transparency** of cooperatives and/or farmer groups, including new efforts and existing efforts such as Neumann Foundation's work with cooperatives in Guatemala and Honduras

## POTENTIAL PARTNERS

- **Existing cooperatives:** Large cooperatives such as COMSA are well positioned to implement these strategies as they have: (i) a platform of various producers / producer groups whose products can be procured and sold at different premiums, (ii) the internal capacity to process coffee from cherry to green,<sup>1</sup> and (iii) the ability to negotiate with buyers
- **International coffee buyers:** Buyers that already buy their coffee in Guatemala, like Nespresso, or in Honduras like San Francisco Bay, tend to place value on direct sourcing from local groups, where this is feasible. This can be leveraged to create long-term relationships that improve negotiation terms for SHFs
- **Market intelligence agency:** Anacafe is well positioned to discover new markets for Guatemalan coffee, as it did in the past with Japan, where it identified and supported the sector to enter this growing. IHCAFE in Honduras could play a similar role
- **Financial institutions:** Finance providers such as Root Capital, Oikocredit, and Banrural can provide loans to farmer groups to increase access to finance to SHFs as well

Notes: 1. If coops have limited capacity to process, farmers can process coffee from cherry to parchment in their farms with minimum investment (e.g., drying bed) allowing them to reduce the urgency to sell. These practices are simple, and the cooperative can teach them to farmers. Many cooperatives in Guatemala already ask their members to deliver coffee in parchment.

# SPOTLIGHT: Overcoming SHFs' aversion to working in farmer groups

Guatemalan and Honduran farmer groups are unpopular among farmers as they are often seen as marginally additive

*"It's hard for farmers to believe in large cooperatives when they are suffering to buy food for their families and the executives of the cooperatives are buying new Range Rovers." – Exporter in Guatemala*

*"A lot of our neighbors don't join the cooperative because they think it's a waste of time because you have to attend meetings in town and bring your coffee here to earn almost the same price as with intermediaries that pick it up at their door." – SHF in a coop in Honduras*

*"I'm not part of a coop. We have been working like this for generations, and it has been fine. How would a cooperative help us anyway?" – SHF in Guatemala*

*"In low price cycles more people want to become part of the cooperative because we offer slightly better prices. But in high price season everyone wants to sell their coffee on the side." – Farmer group in Honduras*

Different programs have overcome similar barriers by focusing on strengthening producer groups, which can provide valuable lessons

## KEY LEARNINGS FROM SUCCESSFUL SHF PROGRAMS

**Building trust** – Groups that actively deliver tangible benefits (e.g., paying premiums, increasing access to loans) to SHFs create strong relationships with members and can motivate others to join

- **Example:** Babban Gonna – a franchise model in Nigeria that buys SHFs' produce, stores it, and sells it during peak prices, has built close relationships with SHFs by supporting them all year-round with services like trainings, access to finance, and premiums for quality<sup>1</sup>; resulting in a growth of 250x during its first six years

**Tightening value chains for SHFs** – Increases farmers' income by providing a suite of services to connect farmers more closely with buyers

- **Example:** Giustra is an organization that creates aggregation businesses that help farmers improve their yields (e.g., TA and inputs), and provide financing, quality control, aggregation and logistics to farmers. This allows SHFs better process, maintain and sell their products to large buyers. Over 10,000 farmers have benefited, generating \$19 million in revenue

**Structuring a transparent and profitable group** – Successful farmer groups have strong governance structures to ensure profitable operations while bringing value to members

- **Example:** Aldea Global, a Nicaraguan farmer group with over ten-thousand members, has a clear governance structure that is divided by business units (e.g., inputs business, financial services). Every unit is managed independently and expected to be profitable through value-add interactions with the cooperative's members

# A stabilization fund can be costly or politically unfeasible if it is a long term or perpetual subsidy, or is highly distortionary

## Description

### Relevant Farmer Segment



Unaggregated and aggregated farmers, regardless of coffee quality

### Price challenge addressed

- Unaggregated farmers do not have access to PRMMs

### Key requirements

- Strong government capacity to set appropriate price thresholds, monitor prices, and respond to market changes
- Rapid and effective payment method to reach all SHFs in a timely manner (e.g. mobile payments)
- Effective and transparent fund management and oversight, preferably by external/ independent entity to the govt, as keeping management within the govt can politicize decisions and risk fund stability (e.g., during elections politicians can be tempted to disburse funds to gain votes from the coffee sector)
- Effective incentive scheme to avoid producers reduce quality because of guarantee price threshold<sup>1</sup>
- Regular contributions to replenish the fund and ensure enough liquidity in time of crisis

### Examples

- Colombia is looking to design a price stabilization fund to support coffee growers
- Price stabilization fund in India for agricultural produce

The price stabilization fund could exist on its own, but the productivity fund is important because:

- **Helps prevent the stabilization fund from becoming a perpetual subsidy** as it helps reduce the cost of farmers, making the business more sustainable under lower prices
- **Strengthens farmers resilience** by helping them increase productivity through improved practices such as R&R, better fertilization, and mechanization of production
- **Enables access to tools that increase PRMMs' effectiveness** such as professionalization and farmer aggregation

### Key conditions for the fund

Only if these three conditions are met it is worth considering the fund.

- 1 **Coffee prices:** Expected to return to sustainable levels
- 2 **Production costs:** Farmers are able to breakeven in times of high prices (possibly with some investment from the productivity fund)
- 3 **Strategic vision:** The coffee sector is key to the economy and needs to be supported through subsidies and investments (e.g., sustains livelihoods of many families, represents large share of exports)

- **Funding:** Government, direct contributions, grants, private sector

Coffee price stabilization fund	+	Coffee productivity fund
---------------------------------	---	--------------------------

Subsidizes farmers in times of low prices to help them get through the crisis

Finances projects to increase quality and productivity to make industry competitive when prices recover

Notes: 1. For example the fund can provide a higher minimum price for higher quality coffee delivered by farmers or can provide the minimum price contingent of minimum quality standards for coffee delivered. These are illustrative ideas that should be studied and tailored further, depending on the value chain and funds capacity to implement them.

# Through separate windows, the fund could subsidize SHFs in times of low prices and provide capital to increase productivity



**How is it structured?**

- Fund pools capital from direct contributions (e.g., fee or tax) from actors along the value chain (most likely exporters<sup>1</sup>), government contributions, and grants from other actors such as foundations, donors or international financial institutions (IFI), or multilateral organizations
- Fund to be established as an independent legal entity
- Fund to be supervised by independent third party

**How is it funded?**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>• <b>Direct contributions</b> from farmers, producer groups and/or exporters, to replenish the fund (e.g. through retentions on exports)<sup>1</sup></li> <li>• <b>Government funding</b> for endowment and minimum liquidity base, through contributions from institutions (e.g. Min of Ag, National Bank, IHCAFE/ANACAFE)</li> <li>• <b>Donor or IFIs can provide grants</b> as initial endowment to start the fund</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Donors or IFIs can provide credit guarantees</b> to attract more capital for investments in productivity</li> <li>• <b>Financing from credit providers</b> to support investments in productivity</li> </ul> |
|---|--|

**How is it managed?**

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>• <b>Subsidies</b> if international prices go below a set threshold</li> <li>• A minimum price threshold to be defined based on cost of production. If the international market price falls below that threshold, the funds complements the difference to farmers.</li> <li>• Subsidy distributions to be payed through electronic transfers or mobile money (Donors or IFIs could help set/ finance up a mobile payment system similar to DaviPlata in Colombia)</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Results-based finance.</b> The productivity window of the fund could be structured as a Development Impact Bond (DIB), bringing together donors, private sector investors, and service providers to deliver finance based on attainment of specific results. E.g., DIB to increase the productivity of coffee and cocoa producers in Peru. The DIB was developed by the Common Fund for Commodities (CFC), the Rainforest Foundation UK (RFUK) and the Schmidt Family Foundation (SFF)</li> </ul> |
|---|---|

Notes: 1. The contributions are usually charged at the export stage. Note that the higher cost of business could either lead to consolidation of exporters because some may not be able to absorb the higher costs or could lead to exporters passing the additional costs to farmers by discounting these costs from prices they buy from intermediaries.

# While these mechanisms have been considered in other countries, price stabilization funds have considerable challenges

## Challenge

### Distort markets



## Description

There is a risk of distorting the market and incentivizing farmers to continue producing coffee

- By rising prices above market, it provides incentives for farmers to stay in coffee even if it is not profitable
- Can also discourage farmers from investing in quality of their coffee given that they have a minimum price guaranteed. An incentive scheme would need to ensure producers' commitment in delivering quality. Results based financing is a difficult application in the context given that the money in the fund cannot be invested in specific projects

### Expensive for governments



Can divert scarce government resources away from productive uses

- Because the money in the fund needs to be accumulated for an indefinite amount of time, private sector actors are unlikely to invest in a stabilization fund
- In a potential scenario where the fund subsidizes the loss farmers incur when prices go below their break even point
  - Honduran producers' break even point of \$1/lb
  - Current international market prices \$0.95/lb
  - Honduras total 2018 exports 965 million lbs

Capital for 1 year:  $(1-0.95) * 965$  million = \$ 48.2 million

### Difficult to implement



The price stabilization fund is difficult to implement effectively

- Requires significant technical expertise and market information to set appropriate price thresholds
- Funds need to be invested in sufficiently liquid investments to be able to disburse money quickly if prices fall unexpectedly
- Difficult to implement politically because may lead to pressure from other industries in country who might also seek government subsidies

***A price stabilization fund is the only solution that would help mitigate price risk for the vast majority of SHFs, regardless of coffee quality and aggregation, but it is an expensive and complex solution that could distort the market. The implications should therefore be carefully assessed***

# Producers can reduce experienced price volatility by signing multi-year OTCCs<sup>1</sup> with downstream value chain buyers

←→ Spot-selling   ←→ One year OTCCs   ↔ Multi-year OTCCs   ★ Use of financial derivatives to benefit producers

## Relevant Farmer Segment:



Aggregated farmers or those with access to formal intermediate buyers. Most common in differentiated coffee niches but also possible in the bulk market

## The Challenge



- **Value chain actors engage in short-term decision making:** Despite synergistic interests there is very little collaboration among actors to engage in mutually beneficial long-term relationships to stabilize prices. This is largely a result of high default / non-compliance rates in a fragmented market
- **Price volatility exposure due to spot-selling or one-year OTCCs** which are based on the going market price
- **Intermediate buyers cannot offer multi-year OTCCs** since they have low access to financial derivatives market
- **Producers do not benefit from hedging strategies** used by intermediate or subsequent buyers

## Examples

- Guatemala: ACODIHUE and Nueva Esperanza del Bosque (cooperatives) have multi-year OTCCs with buyers

## The Solution



- **Multi-year OTCCs** between value chain actors, **coupled with financial derivatives use** to guarantee producers beneficial pricing (slide 40) for a certain volume of produce over a fixed time period.
  - The long-term nature of the OTCCs would (i) protect producers against price fluctuations and (ii) reduce incentives for intermediate buyer and producer default on OTCCs (which is currently limiting buyer willingness to offer them)
  - Buyers would be able (i) to secure supplies/volumes at stable prices and (ii) to improve the traceability of their supply chains
- **Producers benefit from hedging strategies:** The use of multi-year OTCCs would incentivize buyers to invest in the relationship with their suppliers and let the benefits of access to derivatives reach producers

Note: (1) OTCCs are non-standardized contracts between value chain players where the price, the volume, the settlement method and the settlement date are negotiated and agreed upon by both parties. In this case, OTCCs refer to forward delivery contracts between producers and intermediate buyers, and between intermediate buyers and subsequent buyers, (2) Intermediate buyer refers to any entity which buys from a producer directly, this includes cooperatives, informal intermediaries, and exporter owned local buying hubs, amongst others, (3) Subsequent buyers refers to any buyers downstream from the intermediate buyer in the value chain. This includes exporters, second tier cooperatives or even importers, amongst others

# Stakeholders can show ‘proof of concept’ for multi-year OTCCs by collaborating to provide an enabling environment for them

## Requirements

### De-risking value chain interactions to incentivize the formation of OTCCs

- Alleviate producer liquidity constraints which often drive side-selling and ensure producers understand the economics of their farms (and are therefore knowingly committing to profitable OTCCs)
- Increase competition and competitiveness among intermediate buyers to reduce default on OTCCs
- OTCCs are enforceable and noncompliance has consequences

### Access and use of financial derivatives by intermediate buyers

- Intermediate buyers are trained in the use of financial derivatives and have access to the capital required for the investment

### Producers have access to supportive intermediate buyers

- Farmers have access to effective and reliable producer organizations, formal intermediaries or exporter local buying hubs (slide 39)

*Key requirement explored in more detail on the next page*

## Potential interventions

**Multipurpose public-private partnership (PPP)** to provide **proof-of-concept** for how **value chain players can benefit from multi-year OTCCs**. The PPP would provide a **service provision package** to different actors to **tackle all the requirements**. The objective is for actors to gradually increase investment and for donors / govts. to have an exit strategy for the program to be self-sustaining

### Key partners and potential role<sup>1</sup>

#### Financial service providers (e.g. Oikocredit, RootCapital)

- Provide credit access to producers and intermediate buyers (slide 39)
- Facilitate training on use of financial derivatives and access to them

#### Buyers, intermediate and subsequent (e.g. Keurig Green, ECOM, OLAM)

- Develop feasible OTCCs arrangements and pilot them (annex)

#### Implementing NGOs (e.g. Technoserve, Chemonics)

- Develop alternative dispute resolution systems to promote compliance
- Facilitate training on good business practices to producers and buyers

#### Producers and producer organizations

- Use value chain visibility app to reduce information asymmetries (slide 44)

#### Donor or international financial institution (IFI)

- Leverage convening power to bring together a broad range of actors
- Develop blended finance tools to reduce and stabilize option prices (slide 43)
- Develop a ‘credit guarantee’ equivalent for OTCCs side-selling<sup>2</sup>

# SPOTLIGHT: Beyond cooperatives, ‘intermediaries’ can also be leveraged as intermediate buyers for OTCCs

In Guatemala and Honduras, intermediaries are referred to as a ‘problematic’ value chain link...

**Intermediaries have a lot of market power, even on large exporters**

“A handful of intermediaries control a huge market share. The large ones have a lot of power over exporters. For instance, one large intermediary can buy and sell ~350 thousand quintals of coffee. This is about half of the volumes processed by a large exporter, annually” – Exporter from Guatemala

**Intermediaries are unreliable**

“Intermediaries are notoriously unreliable. In the past, many exporters who offered large loans to intermediaries went bankrupt when these intermediaries defaulted on their OTCCs” – Exporter from Guatemala

**Low competition among intermediaries has negative consequences for farmers**

“Local intermediaries collude on prices. Regardless of which local buyer a farmer takes their produce to, they will be offered the same price” – Cooperative leader from Honduras

... initiatives to increase their ability and willingness to implement OTCCs can be learned from other programs

## Empowering and formalizing mid-sized intermediaries

**Example:** Uganda Commodity Production Marketing (CPM)

**Objective:** Focus on incentivizing smaller intermediaries limited market power to improve relationships up and downstream, and building trust and win-win relationships between value chain actors to change processes and behavior

**How it works:**

- 1) Clients (e.g. exporters, traders) choose a set of mid-sized intermediaries they work with and “buy” CPM services for them
- 2) CPM works with the intermediaries to train and empower them to extend services down the value chain to farmers
- 3) CPM services include things like training on business planning, financial management, and/or access to genuine physical products or credit
- 4) Farmers then benefit from services such as input provision and credit access from intermediaries

**Opportunities:**

- Many exporters in Guatemala and Honduras already informally provide intermediaries with access to credit as a means of securing volumes. However, the benefits of this credit access and collaboration do not trickle down to farmers
- Some exporters, such as Unex Guatemala, already invest in mid-sized intermediaries to facilitate farmer access to essential services
- Thus, it seems likely that there would be exporter willingness to invest in similar CPM-like services to pilot OTCCs

# There are different pricing models for OTCCs, which have trade-offs between stabilizing prices and reaping benefits from market upswings

## Relative advantages and disadvantage of the four types of price fixing models for OTCCs

Pricing type		Advantage for producers	Disadvantages for producers	Desirability	
				Producers	Buyers
<b>A</b>	<b>Spot market price<sup>1</sup> + differential</b>	Fully benefiting from market upswings	Fully exposed to volatility in the market price	<b>Medium</b>	<b>Medium</b>
<b>B</b>	<b>Fixed price<sup>2</sup></b>	Fully protected from volatility in the market price	Cannot benefit from upswings in the market (i.e. producers have strong incentives to default on contracts when market price goes over set fixed price)	<b>Low</b>	<b>Medium</b>
<b>C</b>	<b>Spot market price + differential &amp; minimum floor price</b>	Are partially protected from reductions in the market price while also being able to benefit from upswings in the market		<b>High</b>	<b>Low</b>
<b>D</b>	<b>Spot market price + differential &amp; minimum floor plus maximum ceiling price</b>	Are partially protected from reductions in the market price and can also partially benefit from upswings in the market	Can only partially benefit from upswings in the market (i.e. if market price goes above set maximum price producers have incentives to default on contracts)	<b>Medium</b>	<b>Medium</b>

**B, C and D: preferred pricing models for OTCCs as PRMMs (Important conditions in footnotes)<sup>3</sup>**

Notes: 1. Refers to FOB export price 2. Pricing model B is more likely to work with high-quality or specialty coffee and therefore buyers will need to secure supply. 3. Pricing model C can be hard to follow in practice. Producers are unlikely to find buyers willing to purchase some or all of their product (unless they are "social" buyers like NGOs which have limited funds to do so); because this model forces sellers to bear all the burden of price volatility. Model D is most likely to create a long-term buyer-seller relationship, since it provides partial price volatility protection to both buyers and sellers

# The **ability** and **willingness** of intermediate buyers to offer producers these different OTCCs pricing models depends on six key factors

		Ability	Willingness
Contract between intermediate and subsequent buyer			If the intermediate buyer has an <b>B, C or D arrangement with the subsequent buyer</b> , the intermediate buyer can <b>guarantee the producer the same type of contract</b> (once they subtract their margins/transactions costs) without needing to use financial derivatives
Access to financial derivatives <sup>1</sup>			If the intermediate buyer has access to the financial derivatives market, they can use <b>call-options to protect themselves from the risk of side selling if/when prices go up or ensure that they can buy coffee at a reasonable price in the future</b> . Similarly, access to <b>put-options</b> allows intermediate buyers to guarantee themselves and the producer a <b>minimum price floor even if they have an A (spot price) type arrangement with subsequent buyers</b>
Cost of financial derivatives			The <b>absolute value of the strike price</b> of options, as well as <b>changes in market prices, impact their prices</b> . For instance, for put options, the lower the value the strike price, and the lower the difference between the market price and the strike price, the cheaper the option. Therefore, low strike prices in certain coffee markets (due to low production costs and therefore low minimum floor prices), or increases in market price, result in increased economic feasibility of using put options <sup>2</sup>
Coffee market type			Intermediate buyers operating in the <b>differentiated coffee market</b> (e.g. based on quality, origin etc.) have <b>more incentives</b> to offer these contracts as a means of <b>locking in the supply</b> of the specific coffee desired by the subsequent buyers
Level of competition			<b>Strong competition among intermediate buyers or subsequent buyers</b> results in <b>more incentives for intermediate buyer to invest</b> in their relationship with suppliers to lock in supplies
Type of intermediate buyers			Intermediate buyers <b>with a mandate to operate in the interest of producers</b> (e.g. cooperatives) are <b>more likely to be willing to invest in offering producers these OTCCs</b> than other private or profit-motivated actors (e.g. exporters or independent intermediaries)

Note: 1. Use of financial derivatives also requires technical capacity to use these instruments effectively. Call options can also protect the intermediary buyer from producers' side selling in times of high prices, since it provides access to the coffee needed to fulfill its contracts at reasonably low prices. 2. Whereas for call options, the higher the value of the strike price, and the higher the gap between the strike price and the market price, the cheaper the option. Therefore, decreased market prices and increased strike prices, results in high economic feasibility of using call options

# Therefore, the viability of the different preferred pricing options depends on a range of value chain characteristics<sup>1</sup>

## Characteristics that enable or promote the viability of different pricing models and value chain arrangements

### B. Fixed price

- **More viable** in **differentiated** coffee market since (i) it requires buyer willingness to decouple pricing from the market price, and (ii) the fixed price must be higher than the market price for the risk of producer default to be minimized
- **Does not require access to finance** by intermediate buyers **since there is no need** for them **to use financial derivatives**, unless the intermediate buyer has an A type arrangement with the subsequent buyer

### C. Market price + differential & minimum floor price

- **Viable in both** the **bulk and differentiated** coffee markets because it allows pricing to be largely determined by market prices
- **Access to finance** by intermediate buyers **is essential** to **fund use of financial derivatives** which is usually required, unless the buyer has the same pricing type with the subsequent buyer. This is **especially** true for intermediate buyers in the **bulk market** who may face:
  - High put option costs if the market price decreases to a level below or close to the necessary strike price to guarantee the desired minimum price
  - High call option costs if the strike price is low or close to the going market price
- Requires an **intermediate buyer** who is **willing** to only **cover costs rather than make a profit** out of mediating the transaction, for producers to optimally benefit from upswings in the market

### D. Market price + differential & minimum floor plus maximum ceiling price

- **More likely to attract private intermediate buyers than option C** because it allows them to be partially protected from producer side-selling when coffee prices are high
- This in turn is more likely to occur in **bulk** markets where there is (i) **strong relationship** between **value chain actors** or (ii) **strong competition** among buyers or, in the **differentiated** coffee market

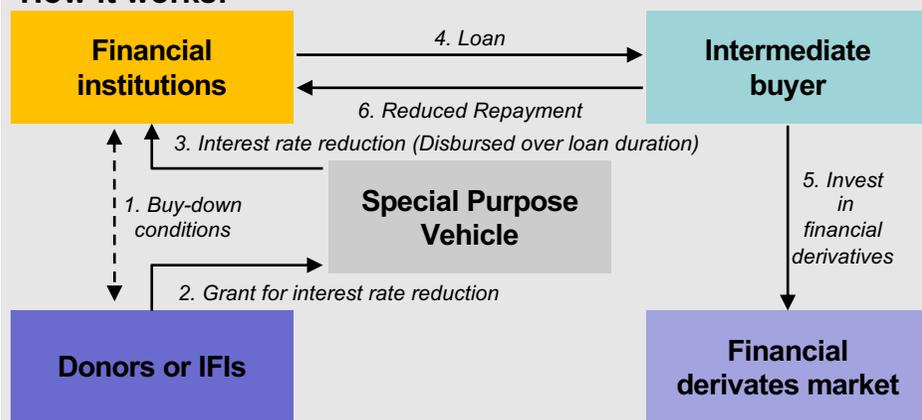
**Across the pricing models, the current viability of OTCCs in the bulk market is lower than in the differentiated market given (i) higher investment costs and (ii) lower intermediate buyer willingness to invest in the relationship with their suppliers**

# Reducing and stabilizing the costs incurred to implement pricing models C and D in the bulk coffee market could be a focus of a PPP

**Problems:** Intermediate buyers suffer (i) **liquidity constraints** limiting their ability to invest in financial derivatives and (ii) **low and expensive access** to capital

**Solution:** **Multi-year loan-buy downs** to (i) reduce cost of accessing credit and (ii) show viability of service provision to FIs<sup>1</sup>

**How it works:**



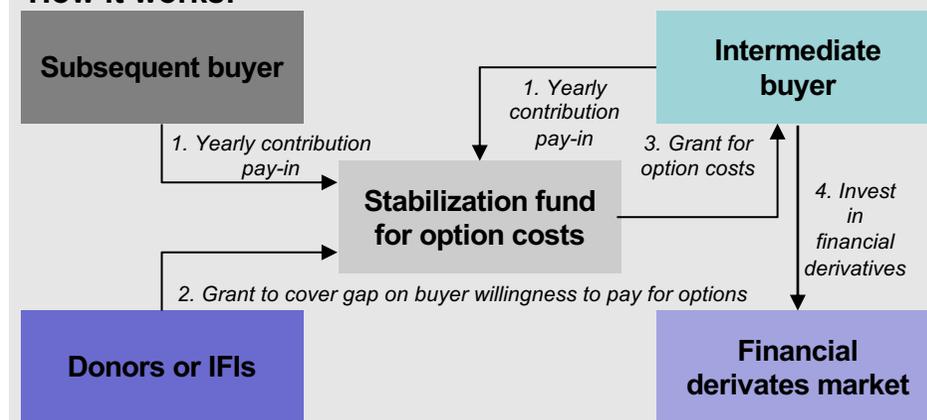
**Considerations:**

- Would financial institutions be willing to offer multi-year loans although these are riskier and therefore more expensive than yearly loans?

**Problems:** Buyers willingness to invest in options required for these pricing models is likely limited by (i) **low proof of concept** and (ii) large yearly **changes in the price of options**

**Solution:** **Blended facility** to reduce and stabilize the cost of financial derivatives for intermediate buyers

**How it works:**



**Considerations**

- Is there subsequent buyer willingness to contribute to option cost? Would this be cheaper for them than offering (i) type B OTCCs or (ii) higher min and max prices for C or D OTCCs?
- Could there be interest from traders or DFIs/IFIs to develop this “yearly contribution pay-in for options” as a product?

## Reducing information asymmetries along the bulk coffee value chain could be a focus of a partnership incentivizing long-term collaboration

**Problems solved:** Producers are perceived by intermediate buyers as risky collaborators with high exposure to production risk and high likelihood of defaulting on OTCCs. Intermediate buyers are also perceived by subsequent buyers as risky collaborators with high likelihood of defaulting on OTCCs

**Solution:** **Supply chain visibility app** to increase intermediate and subsequent buyer willingness to invest in multi-year OTCCs by providing insights on reliability of producers and intermediate buyers as suppliers

### How it works:



#### Reliability as supplier info:

##### Production risk

- Farm size and location
- Yields
- Agro-techniques used

##### Default risk

- Credit history / scoring
- Participation in trainings / education
- OTCC transaction history

#### Reliability as supplier info:

##### Default risk

- Credit history / scoring
- OTCC transaction history
- Participation in trainings

Gathered via (i) community-based verification using blockchain or (ii) value chain player verification like Technoserve SMS program in Rwanda (See World Bank's 2015 *Risk & Finance in the Coffee Sector*)

Gathered via (i) satellite enabled precision agriculture tools, (ii) community-based verification using blockchain or (iii) value chain verification. This would provide useful information about the agricultural practices and investments farmers are making on their crops, which can improve the quality of the product. It can also be used to help increase access to finance for farmers. This is a nice to have, not necessary for the program to work

### Considerations:

- Would producers and intermediate buyers be willing to share this information?
- Are the costs of verification of data using satellite or community-based blockchain initiatives too expensive to implement?

# Agenda

Objectives for this document

Guatemala Situation Assessment

Honduras Situation Assessment

Potential Price Risk Management Models for Scaling

**Annex**

# Cost analysis of green coffee VC in Honduras

## Green coffee bag - Cost breakdown for every link in commercialization and export chain

Inputs		96 Quintal (100 pounds bag)			
NYBOT price for CSCE					
<i>Links and transportation between farmers and exporters</i> <sup>1</sup>	Costs + profits in the link	Cumulative costs	Price to producers	Farmer condition	
IHCAFE Deductions <sup>2</sup>	13.25	13.25	82.75		
Exporter <sup>3</sup>	13.25	26.5	69.5	Organized in exporting groups	
Dryer Collector <sup>4</sup>	5.5	32	64	Organized in non-exporting groups	
Big Truck Collector	5	37	59		
Truck Collector	5	42	54		
Pick up Collector	3	45	51	Un-aggregated	
Mulas Collector	4	49	47		

### Notes

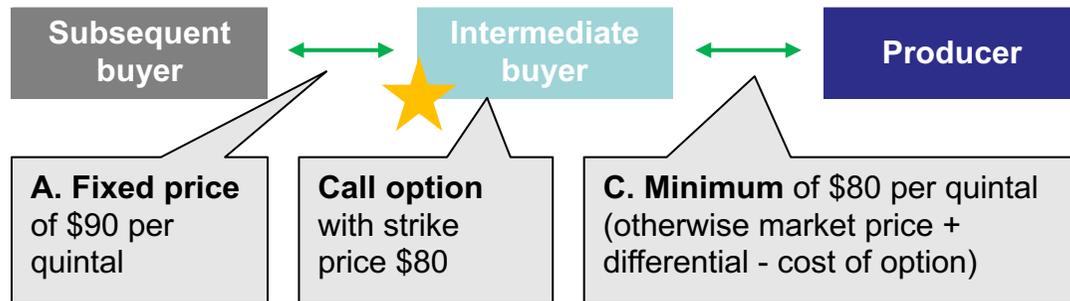
1. Some farmers need to use every link in this chain, that is not always the case. This reflects the path an extremely poor farmer that doesn't have the means to get their coffee out of the farm would have to use. However, there are many instances where just one or two of these links are present from the farm to the exporter.
2. This amount is retained from the payment the exporter makes to every farmer. This money goes to IHCAFE (Honduran Coffee Institute) which is the organization in charge of research, marketing, lobbying and infrastructure development to benefit the coffee sector. This money mainly goes to payment of loans, technical assistance and road maintenance. It's important to note that \$9.00/quintal is returned by IHCAFE to the farmers approx. 6 months after the retention was made with the intent that the farmer will have some money to invest in their next crop cycle
3. This cost is assuming that the exporter is receiving the coffee parchment dry, clean and ready to do their last preparation into green coffee.
4. Cost of drying the wet parchment received from farmers to the appropriate level required by exporter (842% humidity). There are many instances where large coffee farmers or coffee cooperatives/associations provide this service. However, since most small holder coffee farmers don't have access to equipment or cheaper technology that would allow them to dry their wet parchment, this cost would only shift to another player but would still have to be incurred by the smallholder producer.
5. Depending on where the farmer is located and if they belong to cooperatives they use different forms of transportation and pay a fee for those services. Mulas collectors (mules) go to the most remote places, and are usually only used by very small farmers with no other transportation means. This coffee is then sold to the pick-up collector who takes it to a dryer or another collector. Truck or big truck collectors transport coffee from cooperatives to drying stations or exporters. Big trucks can carry larger amounts of coffee and only work on large and paved roads

# Table of contents for illustrative<sup>1</sup> multi-year OTCCs value chain arrangements

#	Pricing model between producer and intermediate buyer	Pricing model between intermediate buyer and subsequent buyer	Use of financial derivatives	Who buys financial derivate	What type of financial derivate
1 (Slide 50)	Type C (Minimum price)	Type B (Fixed price)	Yes	Intermediate buyer	Call option
2 (Slide 51)	Type D (Minimum and maximum price)	Type B (Fixed price)	Yes	Intermediate buyer	Call option
3 (Slide 52)	Type D (Minimum and maximum price)	Type A (Market price)	Yes	Intermediate buyer	Put & call option
4 (Slide 53)	Type D (Minimum and maximum price)	Type D (Minimum and maximum price)	Yes	Subsequent buyer	Put & call option

# Illustrative examples of how the value chain can be structured to provide producers with type C OTCCs

## General overview of arrangement 1

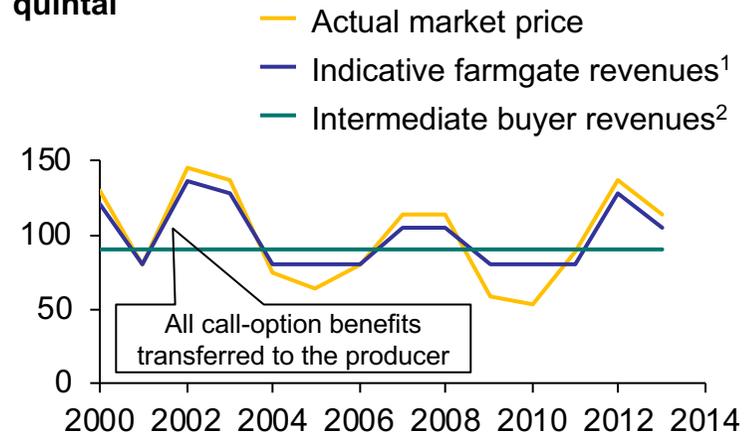


- Intermediate buyer uses the fixed price negotiated with the subsequent buyer to establish a minimum price floor with the producer
- The intermediate buyer buys a call option so that the producer can also benefit from upswings in the market. This reduces the risk of producer default which is common in otherwise fixed-pricing arrangements

## Key considerations of arrangement 1

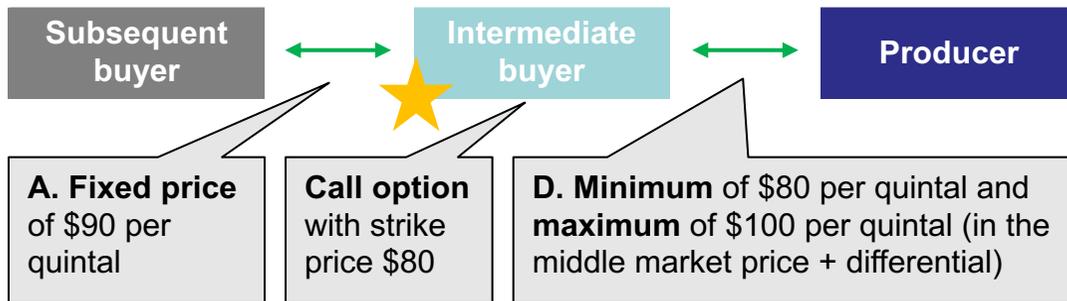
- **Subsequent buyers must be willing to sign fixed price contracts**, this is more common in differentiated / specialty markets
- **Intermediate buyer must be willing to transfer most of the benefits of the call option to the producer**, without absorbing the benefits of upswings in the market themselves. This is likely to happen in specialty markets and in some cases, in bulk markets with a cooperative or producer group that is willing to manage risk on behalf of farmers
- **The purchase of call options must be economically viable**. This is more likely to be the case the higher the value of the strike price and the lower the going market price, given that the option cost is inversely proportional (i) to the strike price and (ii) the gap between the strike price and the market price. Thus, call options for this arrangement will be cheaper if the fixed price by the subsequent buyer is higher, making it more feasible in differentiated coffee markets
- **Risk of producer default still exists** since high option costs may mean farmgate price is well below actual market price

Illustrative graph showing farmgate and intermediate prices fluctuating in relation to market prices with arrangement 1, \$ per quintal



# Illustrative examples of how the value chain can be structured to provide producers with type D OTCCs (1/3)

## General overview of arrangement 2



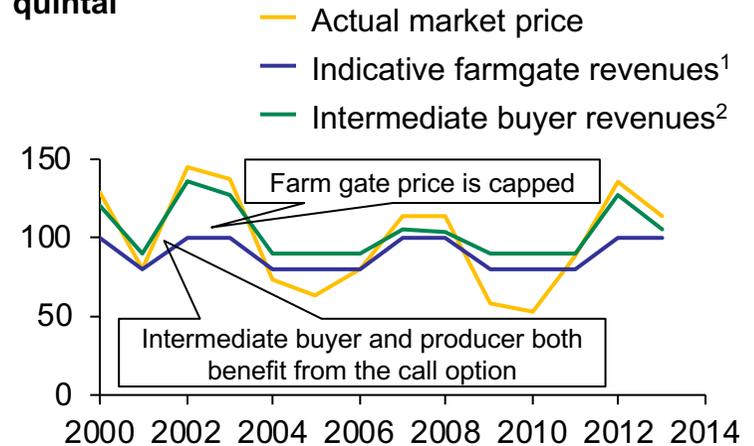
- Intermediate buyer uses the fixed price negotiated with the subsequent buyer to establish a minimum price floor with the producer
- The intermediate buyer buys **a call option to manage its price risk**. Some revenues of the option are transferred to the producer (up until the negotiated maximum price), whilst others are kept by the intermediate buyer and/or used to cover the costs of the option

## Key considerations arrangement 2

- **Subsequent buyers must be willing to sign fixed price contracts**, this is more common in differentiated markets
- **Intermediate buyers must have the incentives to transfer benefits of call option to the producers**. However, this may not be the case if there is little competition amongst them or if the player operates in the bulk coffee market
- **The purchase of call options must be economically viable**. This is more likely to be the case the higher the value of the strike price and the lower the going market price, given that the option cost is inversely proportional (i) to the strike price and (ii) the gap between the strike price and the market price. Thus, call options for this arrangement will be cheaper if the fixed price by the subsequent buyer is higher, making it more feasible in differentiated coffee markets
- **The risk of producer and intermediate buyer side-selling is high** if the market price goes above the maximum ceiling price and fixed price, respectively

↔ Multi-year OTCCs ★ Use of financial derivative to benefit producers

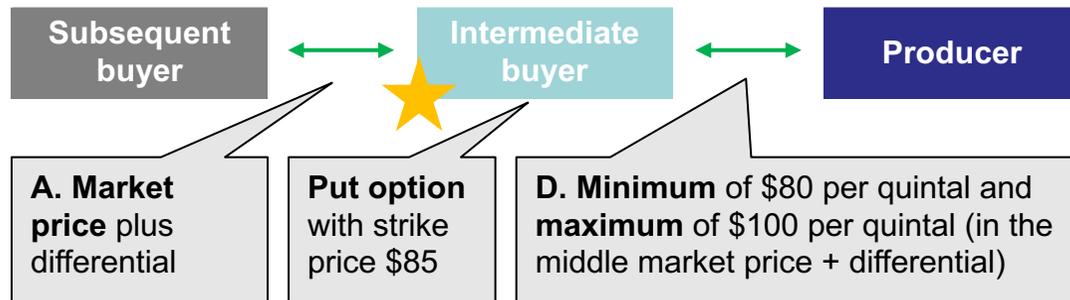
Illustrative graph showing farmgate and intermediate prices fluctuating in relation to market prices with arrangement 2, \$ per quintal



Note: (1) Price being paid by the intermediate buyer to the producer. This is a function of the price by the subsequent buyer plus the revenues from the call option, up until a certain threshold, (2) This is a function of the price being paid by the subsequent buyer to the intermediate buyer combined with (i) the net revenue from call option left over after some of those revenues passed on to the producer, and (ii) the cost of the call option (which has been assumed to be ~\$9 per quintal)

# Illustrative examples of how the value chain can be structured to provide producers with type D OTCCs (2/3)

## General overview of arrangement 3



- The intermediate buyer uses put options to protect themselves from sharp decreases in the market price of coffee, whilst also transferring some of the benefits to the producer via a minimum floor price
- A maximum ceiling price with the producer is also set to cover the costs of put options and allow the buyer to better benefit from upswings

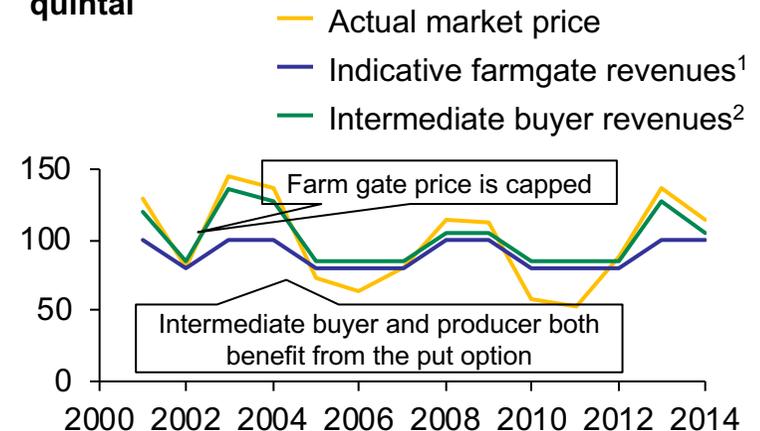
## Key considerations arrangement 3

- **Intermediate buyers must have the incentives to make the investment required to guarantee farmers a minimum floor price.** However, this may not be the case if there is little competition amongst them or if the player operates in the bulk coffee market where traceability is not prioritized
- **The purchase of put options must be economically viable.** This is more likely to be the case the lower the value of the strike price and the higher the going market price, given that the option cost is proportional (i) to the strike price and (ii) the gap between the strike price and the market price. Thus, put options for this arrangement could be unviable if the market price is much lower than the necessary strike price to guarantee the minimum price
- **The risk of producer default and side-selling is high if the market price goes above the maximum ceiling price.** This could be reduced with increasing member equity on coops to increase their interest in seeing the success of the coop

Note: (1) Price being paid by the intermediate buyer to the producer. This is a function of the price paid by the subsequent buyer to the intermediate buyer combined with some of the costs and revenues of the put-option, (2) This is a function of the price being paid by the subsequent buyer to the intermediate buyer combined with (i) some of the revenues from the put option and (ii) the cost of the put option (which has been assumed to be ~\$9 per quintal)

↔ Multi-year OTCCs ★ Use of financial derivative to benefit producers

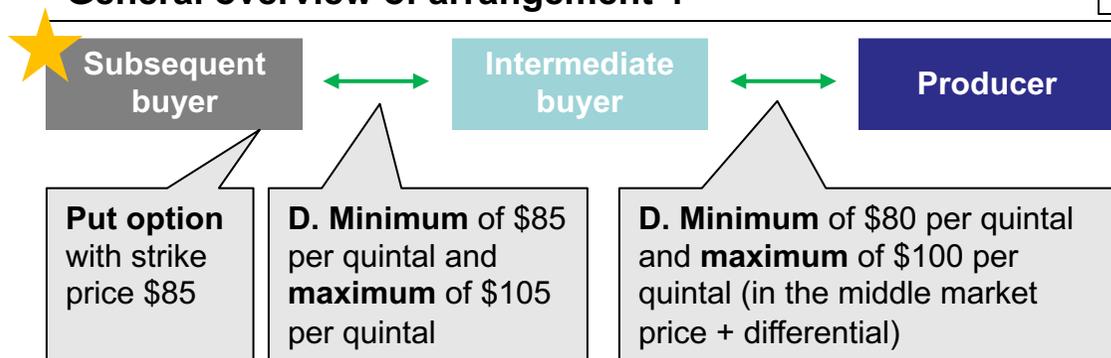
Illustrative graph showing farmgate and intermediate prices fluctuating in relation to market prices with arrangement 3, \$ per quintal



# Illustrative examples of how the value chain can be structured to provide producers with type D OTCCs (3/3)

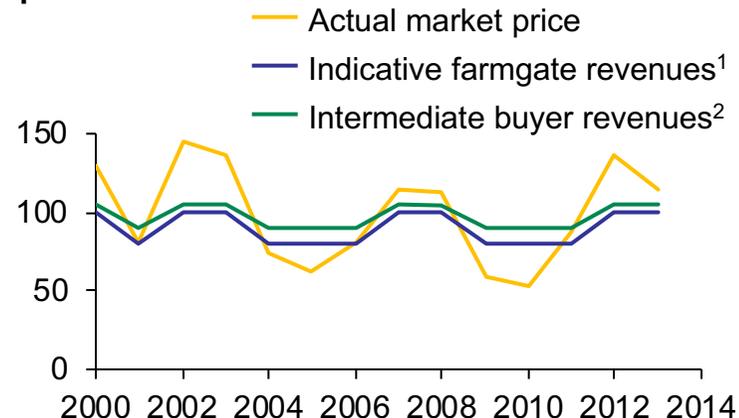
## General overview of arrangement 4

← Multi-year OTCCs ★ Use of financial derivative to benefit producers



- The subsequent buyer uses put options to protect themselves from sharp decreases in the market price of coffee, while also transferring some of the benefits to the intermediate buyer and producer. It can also purchase call options to protect against price spikes that could lead to side-selling
- A maximum ceiling price is also set to cover the costs of put options and allow the subsequent buyer to better manage subsequent buyers' risk

Illustrative graph showing farmgate and intermediate prices fluctuating in relation to market prices with arrangement 4, \$ per quintal



## Key considerations arrangement 4

- **The investment in put options is covered by all three actors.** The subsequent buyer purchases the put option, the intermediate buyer bears the risk of offering a minimum price floor and adhering to a price ceiling for the subsequent sell; and the producer adheres to the maximum ceiling price.
- **The purchase of put options must be economically viable.** This is more likely to be the case the lower the value of the strike price and the higher the going market price, given that the option cost is proportional (i) to the strike price and (ii) the gap between the strike price and the market price. Thus, put options for this arrangement could be unviable if the market price is much lower than the necessary strike price to guarantee the minimum price
- **The risk of producer and intermediate buyer default is high if the market price goes above the maximum ceiling price**