

#SUSTAINCOFFEE



MAKING COFFEE
THE WORLD'S FIRST
SUSTAINABLE
AGRICULTURAL PRODUCT



SUSTAINABLE
COFFEE
CHALLENGE



**SUSTAINABLE
COFFEE
CHALLENGE**

**CONSERVATION
INTERNATIONAL**



WWW.SUSTAINCOFFEE.ORG



THE YEAR IN REVIEW

“We joined the *Challenge* because we share the same goal: making sustainability the norm. The challenges that coffee face (climate change, labor issues, profitability of farming, etc.) can only be addressed when all relevant actors work together. Joining the *Challenge* is an opportunity to work for sector change in coffee” — Miguel Zamora, UTZ



A YEAR OF TREMENDOUS GROWTH



2016 PARTNERS



2017 PARTNERS



NEW PARTNERS SINCE LAST ALL-PARTNER MEETING

- 35 North Coffee
- African Fine Coffee Association (AFCA)
- Alsea
- Aoyagi Coffee Factory
- Boncafe International
- Caffè Ibis Coffee Roasting Co.
- Catholic Relief Services
- Center for Coffee Research & Education
- CIAT (International Center for Tropical Agriculture)
- Ecotierra
- Efico NV
- Fair Trade USA
- Farm Africa
- Fundacion COHONDUCAFE
- Hanns R Neumann Stiftung (HRNS)
- Hesselink Koffie
- Illycaffè
- Instituto del Café de Costa Rica (ICAFE)
- Lagom Coffee Roastery
- Massimo Zanetti Beverage USA
- Mother Parker's Tea + Coffee
- Moyee
- National Cooperative Business Association CLUSA (NCBA CLUSA)
- Nespresso
- Nucafe
- NuJava Coffee Company
- Pur Projet
- Rise Up Coffee Roasters
- Root Capital
- Smithsonian Bird Friendly
- Sumerian Coffee
- Sustainable Food Lab
- TATA Coffee Limited
- The Coffee Source
- Tuungane Women's Coffee Cooperative
- Uganda Coffee Development Authority (UCDA)
- United States Department of Agriculture (USDA)
- Vigilante Coffee
- Walmart Inc.

PARTNERS WITH COMMITMENTS

A special thank you to those Challenge partners who have taken the time to publicly state a commitment.

We recognize your steadfast commitment to increasing transparency in the sector and supporting a more sustainable industry.

For others interested in stating your commitment now, please visit www.sustaincoffee.org

Ahold Delhaize	Lagom Coffee Roastery	S&D Coffee & Tea
Allegro Coffee	Mae Fah Luang Foundation under Royal Patronage	SAGARPA
Aoyagi Coffee Factory	McDonald's Corporation	Smithsonian Bird Friendly
Arizona State University	MI Cafeto Co., Ltd.	Solar Lifestyle GmbH
Association Cafe Africa	Mother Parkers Tea & Coffee	Solidaridad
Center for Coffee Research and Education (Texas A&M)	Moyee Coffee	Starbucks
Conservation International	National Agricultural Export Development Board (NAEB)	Sumerian Coffee
ECOTIERRA	NCBA CLUSA	Supracafe S.A
EFICO	Nespresso S.A.	The Sustainability Consortium
Farmer Brothers	Pelican Rouge	UTZ
FUNDACION COHONDUCAFE	PUR Projet	Walmart Inc.
Keurig Green Mountain		World Coffee Research

COMMITMENTS SNAP SHOT

40% of commitments are made by roasters

49% of commitments have a global focus

64% of commitments relate to technical assistance or sourcing policies

42% of commitments have a 2020 deadline



2017 HIGHLIGHTS

Action Networks

- Launched 4 Action Networks, convened in-person meetings at SCA and teleconferences throughout the year
- Released the **Renovation and Rehabilitation Guidebook** at Sintercafe

Sustainability Framework

- Launched Version 2.0, including common indicators for collective reporting in partnership with the GCP
- Framework lives on Challenge website as interactive guidance tool (overview + detail)

Commitments Hub

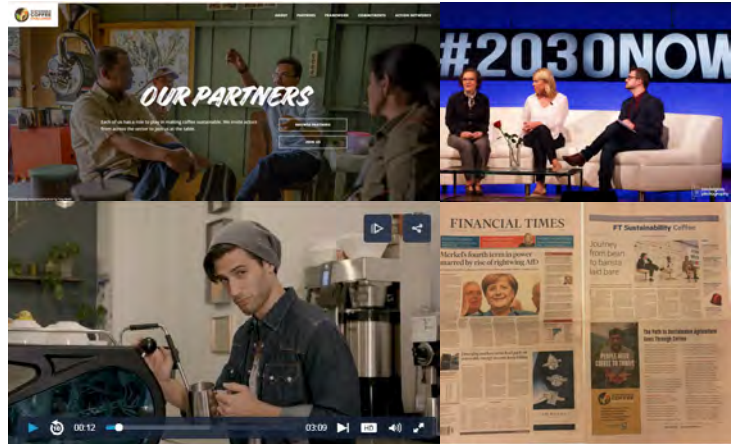
- Initiated reporting against 2016 + 2017 commitments on the Commitments Hub
- Initiated reporting against 2016 + 2017 commitments on the Commitments Hub



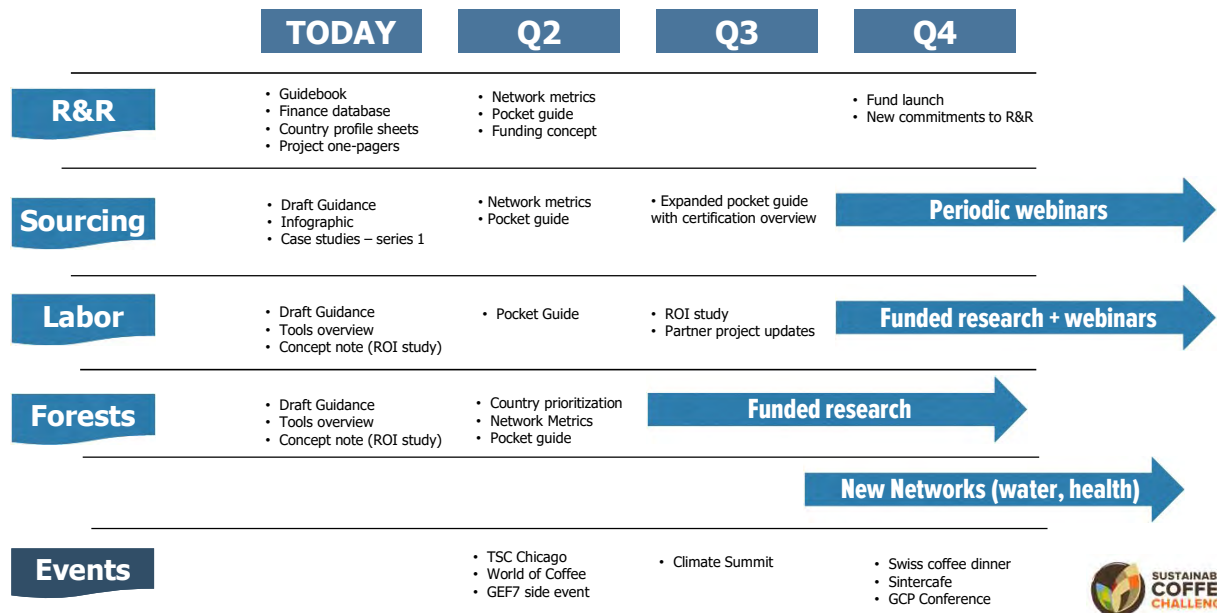
2017 HIGHLIGHTS

Outreach + Awareness

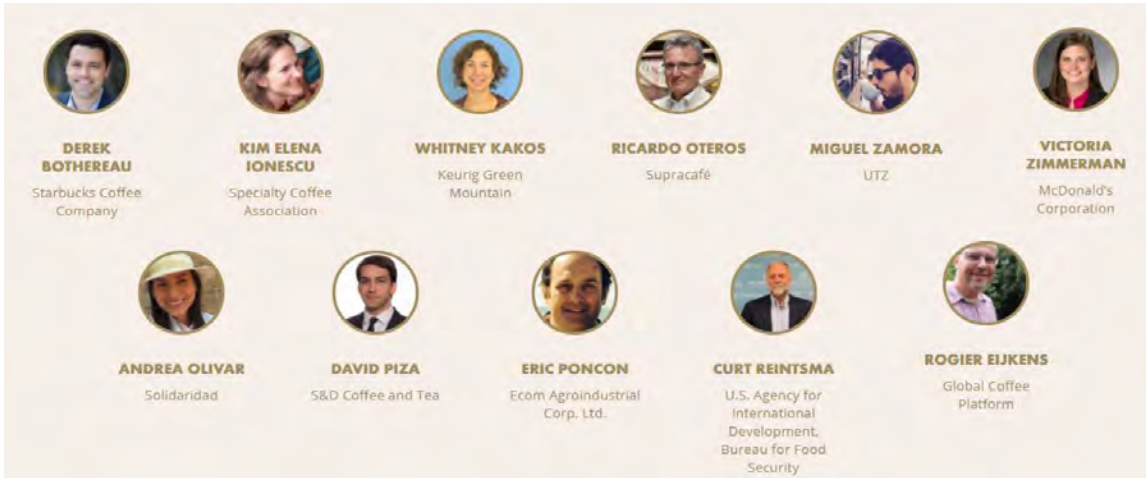
- Completed major refresh of the Challenge [website](#) that showcases partner commitments on National Coffee Day which saw a 350% increase in page traffic
- Partnered with the *Financial Times* on its first [special report on sustainable coffee](#), highlighting sector-wide challenges in the industry and distributed to 2.2 million FT readers in print and digital
- Released an out-of-the box consumer-facing video, "Save Coffee, Save the World" featuring the Challenge as part of a Mashable blog on the Challenge and spoke about the Challenge at the NYC event.
- Raised awareness of the Challenge in Peru via a local **Sustainable Coffee Challenge event** with major coffee stakeholders.



COLLECTIVE ACTION NETWORK 2018 MILESTONES



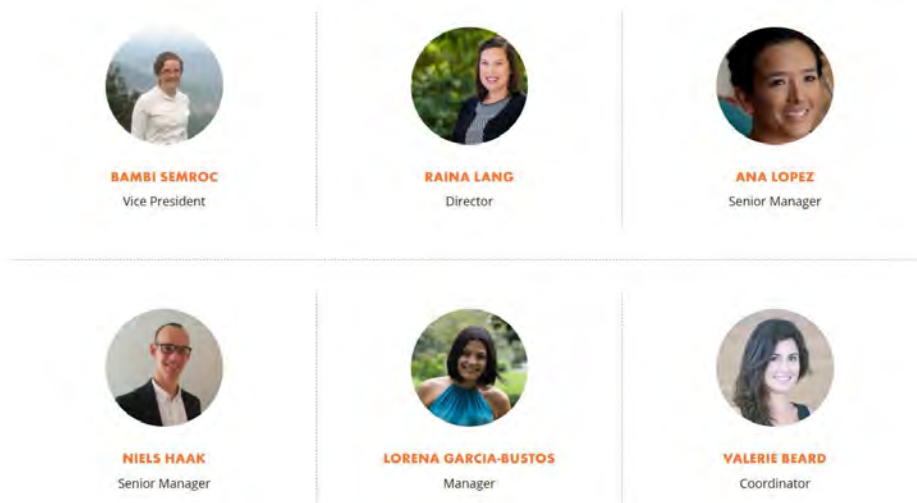
ADVISORY COUNCIL



We would like to thank the members of the advisory council for providing strategic advice and guidance to the secretariat on the direction of the Challenge to enable and ensure effective and efficient progress and momentum!



MEET THE CHALLENGE SECRETARIAT



The secretariat of the Challenge is composed of Conservation International staff, based in Washington DC, Brussels and San José.

Get in touch with our team via scc@conservation.org





STATING AND REPORTING ON COMMITMENTS

“The Sustainable Coffee Challenge, through the Sustainability Framework, has provided clear and effective ways for companies across the coffee value chain to engage on ambitious supply chain interventions, and report progress against the Sustainable Development Goals” – David Piza, S&D Coffee & Tea

© STARBUCKS





HOW-TO GUIDE ON STATING & REPORTING ON COMMITMENTS

The Sustainable Coffee Challenge hosts a place for stakeholders to publicly state their commitments to sustainability and report on progress over time. By shedding light on commitments made by stakeholders throughout the sector, we can better leverage them to form new partnerships and inspire others to act. While the coffee sector has invested heavily in sustainability for decades, we recognize that the complex issues facing the sector require a wide range of solutions and commitments. Transparency of sustainability commitments means stating them in a shared space and reporting on progress.

Purpose of the Commitments Hub

The Sustainable Coffee Challenge partner commitments represent an innovative way to address the growing threat to the global coffee industry. Commitments can be small or large, global or local. No matter the size or scope, commitments help advance the coffee sector toward becoming the world's first sustainable agricultural product.

To support the development of commitments among partners, the Sustainable Coffee Challenge facilitates a place for convening and sharing, and provides opportunities for organizations to publicly state, report and track their commitments. The Commitment Hub sets out to...

- Develop a shared understanding of our collective action on sustainable coffee production
- Drive new and more ambitious commitments to sustainable coffee
- Stimulate necessary investment for transforming the sector

Steps to Accessing the Commitments Hub



Visit www.sustaincoffee.org.



Access the Commitments Hub by clicking on “Commitments” in the homepage’s toolbar, and then the “Start One” and “Start One Now” buttons.



Register your organization.



Receive login details from our partner, Supply Shift.



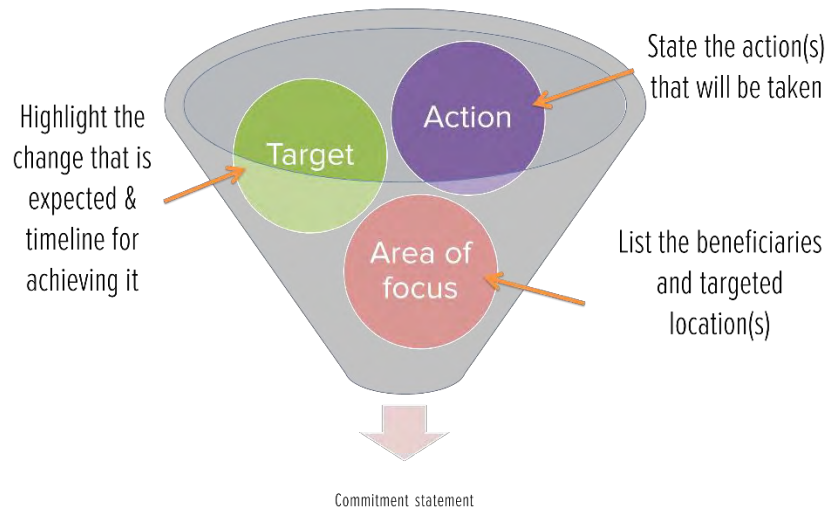
Log in, state your commitment and join the network.

Principles of a Commitment

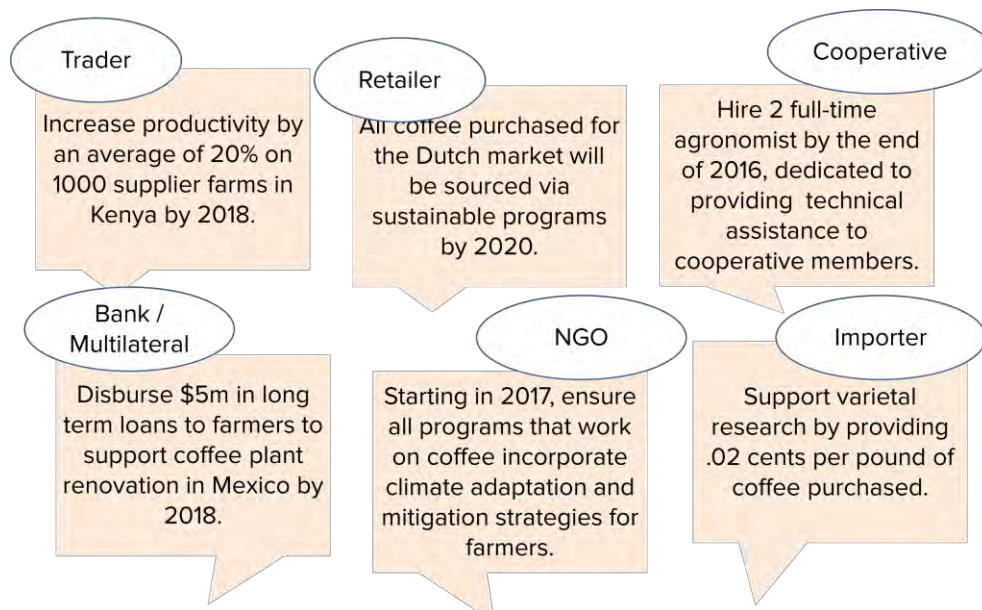
Commitments generally take the form of investments and actions taken to achieve specific targets or outcomes. Within the Sustainable Coffee Challenge, partners have agreed that the following principles should guide commitments:

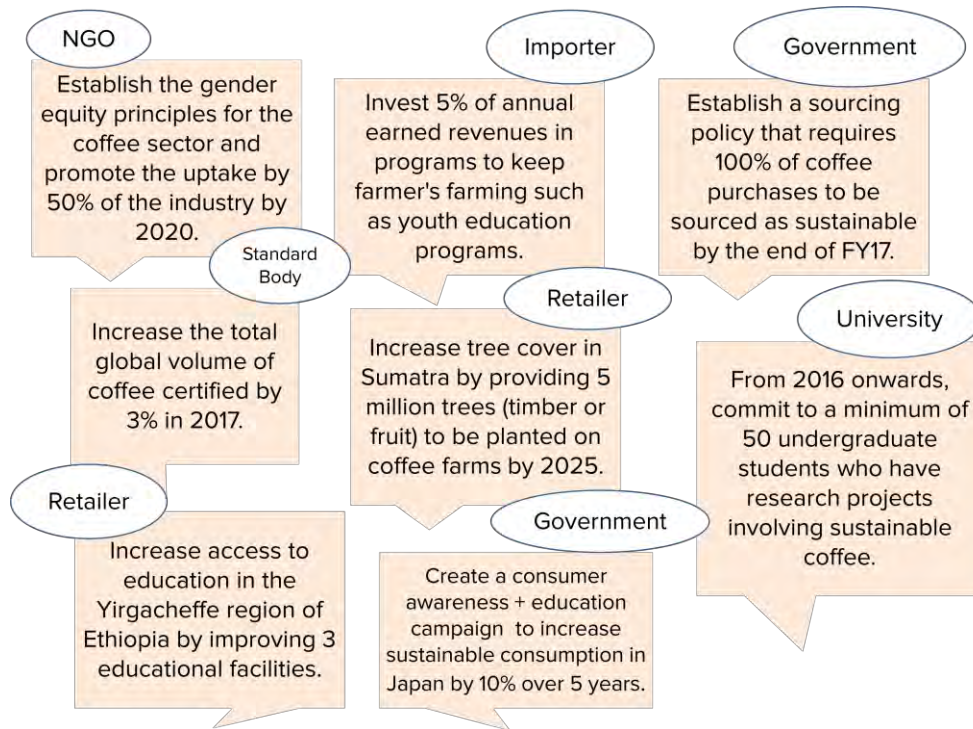
- New or active commitment: Every commitment that is stated via the Sustainable Coffee Challenge Commitments Hub should be either a new commitment or an existing commitment that has yet to be achieved.
- Incorporates SMART objectives: Commitments should be specific in what they set out to achieve, incorporate measurable targets, be ambitious in nature, relevant for the industry, organization or supply chain being targeted, and time-bound.
- Aims for impact: Commitments should consider the contribution to one or more of the North Star elements – prosperity & wellbeing of producers; forest, water and soil conservation; and/or sustained supply of coffee.
- Can be reported at set intervals: Organizations should enter commitments that can be reported on in the system on an annual or semi-annual basis with 1st, 2nd or 3rd party data.

Considerations when formulating a commitment



Illustrative examples of SMART commitments





Commitments Questions

The following questions are asked when stating a commitment in the Hub. The questions noted with an asterisk indicate that the answer will be publicly displayed on sustaincoffee.org

1. Name of organization*
2. Type of actor*
3. What is your commitment?*
4. What is the critical issue you are trying to address?*
5. How are you addressing the issue?*
6. When was the commitment made?*
7. What is your goal / target?*
8. When will it be reached?*
9. How much will you invest?
10. What countries are you targeting?*
11. What types of metrics will you use to monitor progress?
12. Is this commitment in partnership with others?
13. Who are your partners?*
14. Which partner will be responsible for reporting?

Displaying Commitments

Once a commitment is submitted, the CI coffee team will publish it to the www.sustaincoffee.org website and make general statistics (e.g. actor type, geography, target year) about the commitment public on the commitments landing page.

All partners in the Sustainable Coffee Challenge who have stated a commitment receive a dedicated partner “profile pages”, that includes partner information, the commitment text, in partnership with, related SDG and a virtual reporting mug. On an annual basis, organizations are expected to report on progress against their commitments. Once progress is stated, a new section will open with a qualitative overview of progress in addition the filling the virtual mug based on a quantitative update.

Need-To-Know Facts for Reporting

1. Similar to commitments, reporting responses are captured in the *Supply Shift* system. Click [here](#) to log-in to the system directly.
2. One survey is required to be completed per commitment. The reporting survey contains a series of questions, some of which you will be able to skip if they do not apply.
3. The system enables organizations to report on progress to date against your commitment. In the first reporting cycle, you should enter cumulative progress against commitments through the end of 2017 as a percentage.
4. Your organization will be asked to report on overall progress against completion (i.e.: What percentage best represents your current state of overall progress on this commitment? e.g. 20% completed)
5. Over time, the Sustainable Coffee Challenge will aggregate results from the reporting survey to capture our collective progress in making coffee the world's first sustainable agricultural product. We've included some units (e.g. weight, area, currency, people) that would enable us to include your information in these results and we encourage you to explore these.
6. Several responses of the reporting survey will feed to the partner page (referenced in the image below). This public-facing information will include:
 - **Status:** This percentage describes the commitments' overall progress, which will feed the level of coffee in the coffee cup (e.g. 20% complete). The related question in the reporting survey is # 1.6.
 - **Target Date:** This is the end date of your commitment which is taken from when your commitment was stated. The related question in the survey is # 1.9 in the commitments survey.
 - **Countries Targeted:** This information is also taken from when the commitment was stated. The related question in the survey is # 1.11 in the commitments survey.
 - **Update:** This area is a time stamped text box to share anecdotal/qualitative progress of the commitment. The related question in the reporting survey is # 1.16.

Please note that all other text (not circled) in the image below will feed from your **originally stated** commitments:

Our Commitments

NCCA CLUSA is committed to the increased production and the sustainability of the coffee sector which will contribute to the economic and social development of El Salvador. NCCA CLUSA uses a holistic approach to maintaining the human-ecosystem equilibrium that reduces the adverse effects to populations, the soil, and water supply while respecting the country's biodiversity.

By September 2018, NCCA CLUSA has committed to strengthen and improve the capacity of 7,500 smallholder farmers and 50 cooperatives; renovate 6,000 hectares of coffee farms with Coffee Leaf Rust resistant varieties; establish 100 coffee plant nurseries with coffee rust tolerant varieties; produce 7,225,000 plants for Salvadoran coffee farmers whose farms were affected by coffee rust; build 200 organic inputs manufacturing sites to produce 1000 metric tons of solid organic fertilizers such as Bokashi and/or compost and produce 300,000 liters of organic liquid bio-fertilizers.

In partnership with: United States Department of Agriculture, CLUSA de El Salvador, Ministerio de Agricultura y Ganadería, CENTA Café, Consejo Salvadoreño de Café, Banca Hipotecaria, SALVANATURA, Coordinadora Latinoamericana y del Caribe de Pequeños Productores y Trabajadores de Comercio Justo, Comercial Exportadora, Asociación Salvadoreña de Catadores de Café, Asociación Alianza de Mujeres en Café de El Salvador

UPDATE
December 8, 2017

The USDA funded El Salvador Coffee Rehabilitation and Agriculture Diversification project has exceeded numerous targets regarding number of beneficiaries reached, producer organizations trained and various others. Although there are some indicators that require more attention, the project is confident it will meet or exceed all of its goals.

UN SUSTAINABLE DEVELOPMENT GOALS

Figure 1 Sustainable Coffee Challenge Partner Page: Commitments Preview

Step-By-Step Guide to Reporting

Please note that this guide contains screenshots from *Supply Shift*. To watch an instructional video on how to report, please click [here](#).

1. Login to supplyshift.net with your unique login name and password provided when you registered to state a commitment.

2. Within Scorecard Requests, please click on “Sustainable Coffee Challenge Reporting Survey”

The screenshot shows the 'Scorecard Requests' page in the SupplyShift interface. The page title is 'Scorecard Requests' and it includes a search bar and two buttons: 'Manage Products' and 'Manage Sites'. A table lists the scorecard requests:

Scorecard	Customer	Status	%
Sustainable Coffee Challenge Reporting Survey Target: Company Date sent: 12/08/2017 Reporting period: 2017	SCC		50%
Sustainable Coffee Challenge Commitments Target: Company Date sent: 06/22/2016 Reporting period: 2016	SCC		53%
Sustainable Coffee Challenge Commitments Target: Company Date sent: 06/22/2016 Reporting period: 2016	SCC	Submitted	89%

3. Click on Section: **Commitment Reporting** and click the “Edit” button

The screenshot shows the 'Sustainable Coffee Challenge Reporting Survey' page. The page title is 'Sustainable Coffee Challenge Reporting Survey' and it includes a breadcrumb trail: 'Scorecard Requests / Sustainable Coffee Challenge Reporting Survey'. Below the breadcrumb, there are filters for 'From: SCC' and 'Reporting Period: 2017'. There are three buttons: 'Export', 'Import', and 'Submit'. A section titled 'Section: Commitment Reporting (0% completed)' is highlighted with a red circle. Below this section is a table with columns for different commitment types and rows for 'My coffee commit...' and 'My other coffee o...'. An 'Edit' button is highlighted with a red circle in the top right corner of the table.

SCCR 1.1 Organizational Commitments	SCCR 1.2 Monitoring Metrics	SCCR 1.3 Commitments (Partnerships)	SCCR 1.4 Commitments (Partners)	SCCR 1.5 Commitments (Partner Reporting)
My coffee commit...	Click to respond	Click to respond	Click to respond	Click to respond
My other coffee o...	Click to respond	Click to respond	Click to respond	Click to respond

- Click within the **“Monitoring Metrics”** field to bring up the field of pop-up questions and answer

The screenshot shows the 'Sustainable Coffee Challenge Reporting Survey' interface. At the top, there are logos for 'SUPPLYSHIFT' and 'SUSTAINABLE COFFEE CHALLENGE'. Below the logos, there are navigation options for 'English', 'HELP', and 'ACCOUNT'. The main content area is titled 'Sustainable Coffee Challenge Reporting Survey' and includes a 'Scorecard Requests / Sustainable Coffee Challenge Reporting Survey' breadcrumb. There are buttons for 'Export', 'Import', and 'Submit'. The survey is divided into sections: 'Section: Commitment Reporting (0% completed)' and 'Section: Acknowledgements (100% completed)'. The 'Commitment Reporting' section contains a table with columns for different SCCR metrics. The 'Monitoring Metrics' column is circled in red.

SCCR 1.1 Organizational Commitments	SCCR 1.2 Monitoring Metrics	SCCR 1.3 Commitments (Partnerships)	SCCR 1.4 Commitments (Partners)	SCCR 1.5 Commitments (Partner Reporting)
My coffee commi...	Click to respond	Click to respond	Click to respond	Click to respond
My other coffee co...	Click to respond	Click to respond	Click to respond	Click to respond

- Please mark your responses and **click the save button** after each question

The screenshot shows a pop-up window titled 'SCCR 1.3 Commitments (Partnerships)'. The window contains a question: 'Is this commitment made in partnership with others?'. Below the question, there is a dropdown menu for 'Answer: Yes/No' and a checkbox for 'Not applicable'. To the right of the question, there are sections for 'Internal Documentation', '3rd Party Audit/Verification', and 'Comments'. At the bottom of the window, there is a 'Save' button circled in red and a checkbox for 'Open next question'.

- When you have answered all of the questions in the survey, please click the button for “Lock”

The screenshot shows the 'Sustainable Coffee Challenge Reporting Survey' interface. The left sidebar contains 'BUYER MENU' and 'SUPPLIER MENU'. The main content area shows the survey title and 'From: SCC' and 'Reporting Period: 2017'. There are 'Export', 'Import', and 'Submit' buttons. The 'Section: Commitment Reporting (0% completed)' is expanded, showing a table with columns for SCCR 1.1, 1.14, 1.15, 1.16, and 1.17. A 'Lock' button is circled in red in the top right corner of the table area.

SCCR 1.1 Organizational Commitments	1.14 Cumulative (Other Units-2)	SCCR 1.15 Cumulative Progress (Target-Other Units-2)	SCCR 1.16 Commitment Progress (Summary)	SCCR 1.17 Assurance Method
My coffee commit...	to respond	Click to respond	Click to respond	Click to respond
My other coffee co...	to respond	Click to respond	Click to respond	Click to respond

- After answering the reporting survey, please click the “Acknowledgements” section by clicking on “show all indicator detail” and click the lock image to unlock and answer the question. Select the “Lock” button when you finish

The screenshot shows the 'Sustainable Coffee Challenge Reporting Survey' interface. The left sidebar contains 'BUYER MENU' and 'SUPPLIER MENU'. The main content area shows the survey title and 'From: SCC' and 'Reporting Period: 2017'. There are 'Export', 'Import', and 'Submit' buttons. The 'Section: Acknowledgements (100% completed)' is expanded, showing a question about reporting responsibility. A 'Lock' button is circled in red at the bottom left of the question area.

Section: Acknowledgements (100% completed)

[Hide all indicator detail](#)

✓ SCCR 2.1 Reporting Responsibility Last answer: 04/13/2019

Question Required

I acknowledge that my organization is responsible for reporting on behalf of the program.

Answer: Yes/No

Yes Not applicable

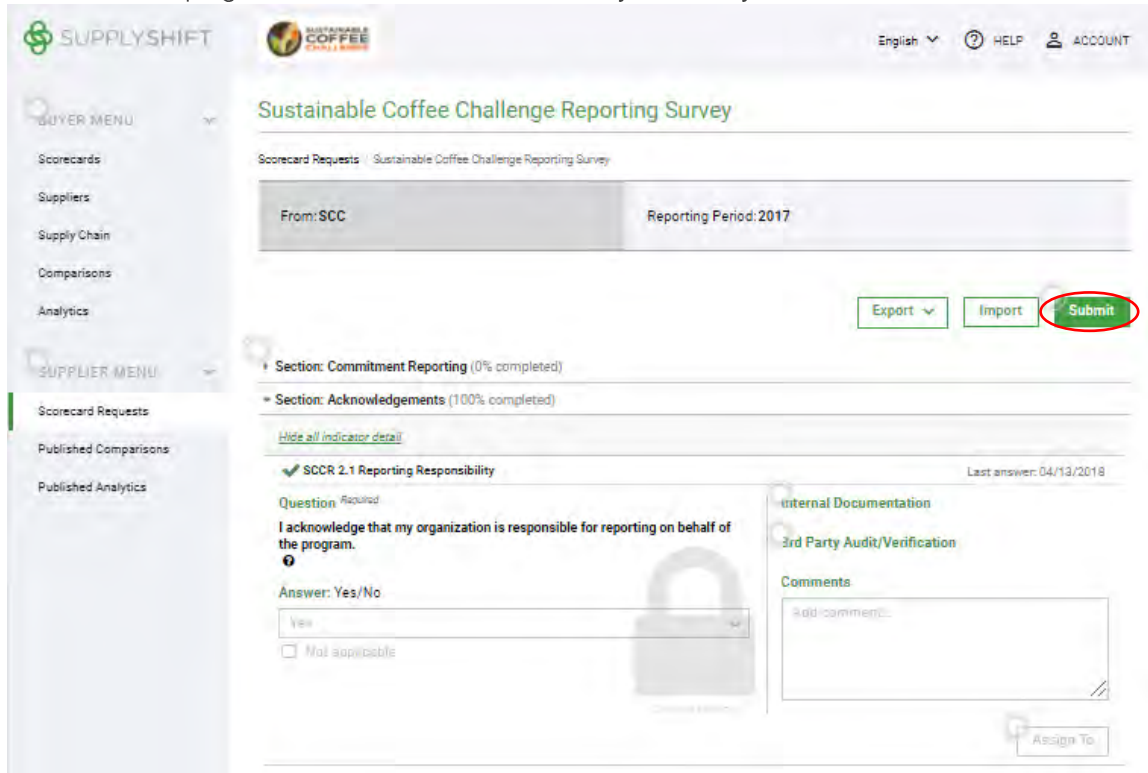
Internal Documentation Upload

3rd Party Audit/Verification Upload

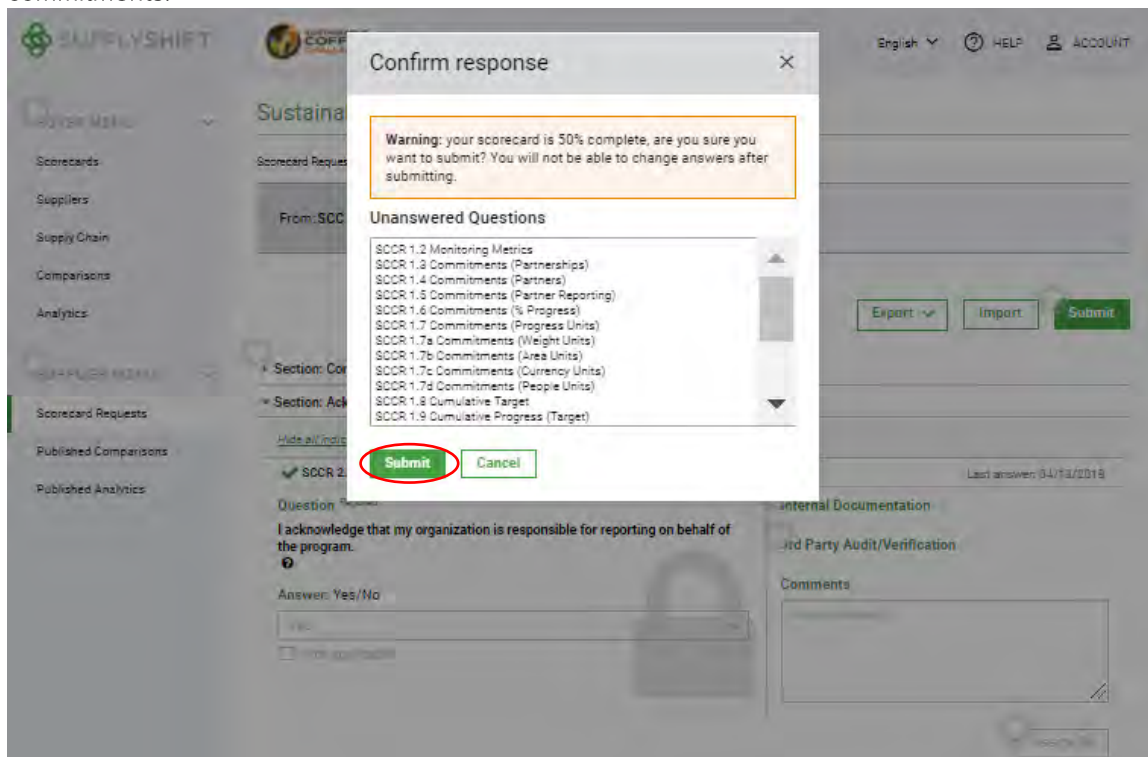
Comments Add comment

Lock Assign To

8. Once “lock” is selected, a watermarked image of a lock will appear. At this time, please move your cursor to the top right and click **“SUBMIT”** to submit your survey



9. A secondary confirmation box will appear. Please select **“Submit”** to finalize the survey. Please open additional surveys if you have additional commitments. Thank you for reporting on your commitments!



Still have questions? If at any time you need help formulating a commitment, entering it in the system or reporting, please feel free to contact us at scc@conservation.org. We'd be more than happy to assist!



FROM INFORMATION TO ACTION

“Over the past two years every time *Challenge* partners convene, there’s this energy and sort-of healthy impatience (for lack of a better phrase) to figure out how we can reach this goal of 100% sustainable coffee by moving faster and learning from each other along the way. I think that spirit and energy continues to grow, and we should continue to push towards action and measuring impacts even where it hasn’t been done before.” – Derek Bothreau, Starbucks

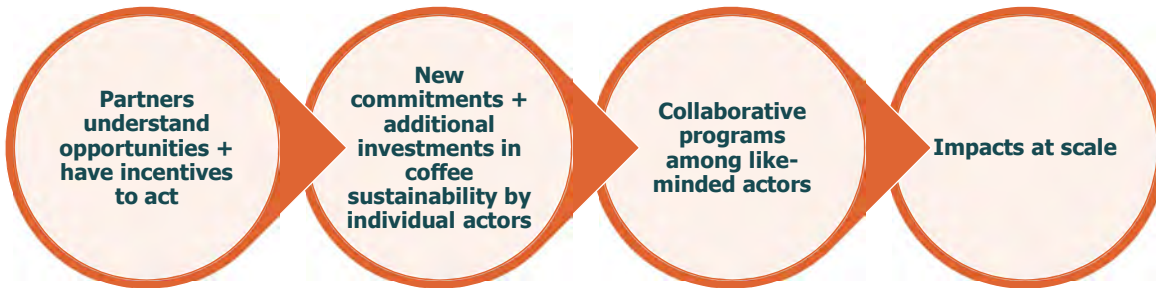
© STARBUCKS



WHERE IS THE COFFEE SECTOR TODAY?



OUR THEORY OF CHANGE



- Develop Guidance Documents
- Develop Case Studies
- Increase Transparency
- Set Common Targets + Metrics
- Fill Information Gaps
- Leverage Finance

- Provide mechanism for transparency + reporting (Hub)
- Advise on commitments and investment strategies

- Identify common priorities
- Leverage finance to form public—public - private, private, private... partnerships
- Apply common targets and metrics

- Report on impacts using common metrics



COLLECTIVE ACTION NETWORKS

01.

Scaling Up Sustainable Sourcing

Sharing experience and lessons to help companies establish and achieve sourcing commitments. Exploring metrics and measurements across schemes to align, value and recognize shared progress.

02.

Farm Renovation & Rehabilitation

Meeting the needs to replant an estimated 2.2 million hectares globally while applying best practices that restore productivity, ensure human rights and conserve the environments

03.

Improved Labor Practices and Supply

Ensuring a continues supply of labor and promoting good labor conditions across coffee producing countries.

04.

Mapping + Monitoring of Coffee and Forests

Identifying innovative ways to map and monitor the extent of coffee and forests and how this is changing over time.



GLOBAL COFFEE PLATFORM COLLECTIVE ACTION NETWORKS

Economic Viability of Farming

Increasing efficiency of interventions and investments that contribute to making coffee farming profitable

Climate Smart Agriculture

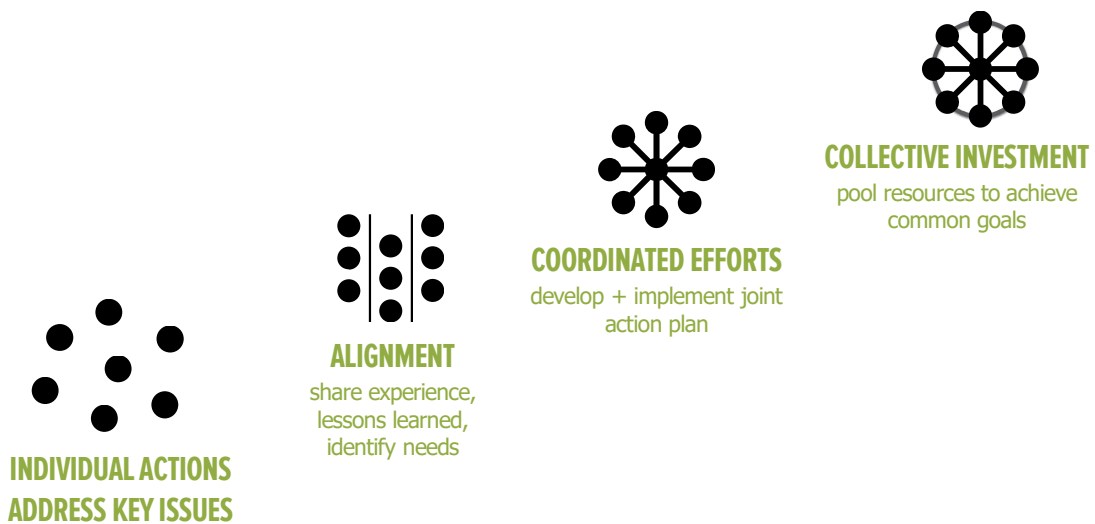
Scaling successful public-private initiatives that enable coffee farmers to adapt and respond to climate change

Gender & Youth

Identifying and responding to gender inequity at origin to empower communities and build resilience together

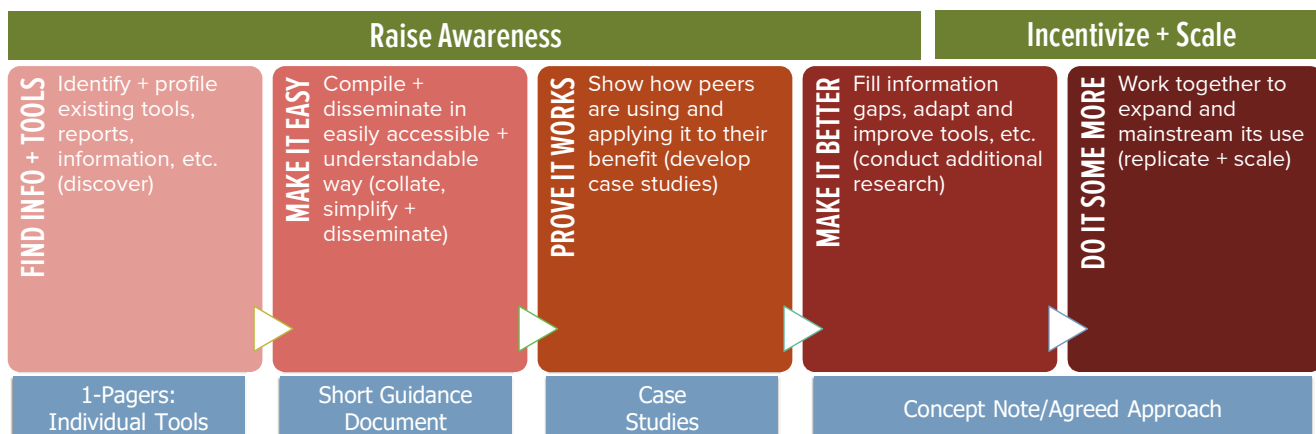
Challenge partners are welcome to participate in the GCP networks.
Please visit <http://www.globalcoffeeplatform.org/> for more information.

DRIVING ACTION AT SCALE



ADVANCING COLLECTIVE ACTION

How do we drive action and advance our goals?





SCALING UP SUSTAINABLE COFFEE SOURCING

Inspire transparent sourcing commitments through sharing experience, lessons learned and approaches, so as to increase the purchase of sustainable coffee across the supply chain.

© CRISTINA MITTERMEIER



SOURCING ACTION NETWORK MEMBERS

1. 35 North Coffee*
2. Ahold*
3. Aoyagi Coffee Factory*
4. Arizona State University (ASU)*
5. Caffè Ibis Coffee Roasting Co.*
6. Café Mam
7. Fair Trade USA*
8. Fairtrade Africa
9. Fairtrade America*
10. Fairtrade International
11. Farm Africa*
12. Farmer Brothers*
13. Heifer International
14. HRNS*
15. International Center for Tropical Agriculture (CIAT)*
16. Intercontinental Coffee Trading (ICT)*
17. IWCA*
18. Keurig Green Mountain*
19. McDonald's*
20. nuJava Coffee Company*
21. S&D Coffee and Tea*
22. Solidaridad*
23. Starbucks*
24. Sustainable Harvest*
25. Supply Shift*
26. The Sustainability Consortium*
27. Tuungane Women's Coffee Cooperative*
28. UTZ*
29. Vigilante Coffee*
30. Walmart*

**Denotes Sustainable Coffee Challenge partner*





POCKET GUIDE
**SUSTAINABLE
SOURCING**



OVERVIEW

Where are we in the journey? How much farther do we have to go?

Coffee was one of the first commodities to embark on sustainability. Today 48 percent of coffee is produced according to a sustainability standard. This means the coffee comes from producers who have met the requirements of one or more of the following programs: Rainforest Alliance, FairTrade, Utz, 4Cs, C.A.F.E. Practices, and/or AAA Nespresso. That's the good news... we're nearly half way there.

Yet, of this coffee only 12 percent of global coffee is marketed under one of these labels. 88 percent is not. These figures do not account for coffee traded via direct trade or other programs that operate more on a supply chain investment model. The totals may be more or they may be less.

Yet, these figures do tell a story. It's a story of farmers adopting practices and undergoing the audits, but perhaps not seeing the demand for sustainability always match and reward their efforts. Commitments to sustainable sourcing help align these expectations.

Source: State of Sustainability Initiatives (full reference needed)

What is a sustainable sourcing commitment?

A commitment made by a downstream buyer of coffee (e.g. a retailer, roaster and/or trader) to source coffee that meets a minimum level of good environmental and social practice.

These commitments often set a target for the percentage of supply they want to transition to sustainable sourcing, define the types of programs they will accept in their accounting toward that target and a date by which they expect to meet their goal.

Why do they matter?

Sustainable sourcing commitments send strong signals throughout the coffee supply chain that there is market demand for sustainability in the coffee sector.

They also enable companies to build stronger relationships with suppliers and identify opportunities for collaboration.

Sourcing commitments also allow us to track and communicate our progress on transitioning the coffee sector to sustainable production.



PEOPLE NEED COFFEE TO THRIVE, AND COFFEE NEEDS PEOPLE AND NATURE TO THRIVE

MAKING SENSE OF SUSTAINABLE SOURCING OPTIONS

What are the various approaches?

There are a number of options available to coffee companies developing a sustainable sourcing strategy. Traceability, transparency, certification, verification, direct trade. It can seem overwhelming and confusing.

What do they encompass? What is the difference in the approaches? And are they right for your business?

48%

OF THE GLOBAL COFFEE CROP

IS NOW BEING PRODUCED
UNDER SOME SORT OF
SUSTAINABILITY STANDARD

Transparency + Assurance + Investment

Each of type of program really address three key issues: knowing where the coffee came from, knowing how it was produced and identifying opportunities to invest in programs that sustain production, support communities and conserve nature.

1. Transparency / Traceability:

Understanding where the coffee was produced - which origin, which cooperative, which farm produced the coffee Programs can range from full traceability of the coffee back to the farm to knowledge of the supplier names to knowing only the country of origin for the coffee.

2. Assurance of Sustainable Practices:

Understanding whether the coffee was produced using good environmental and social practices. Programs range from supplier questionnaires to 3rd party certified coffee. Transparency and assurance are often addressed together via verification and certification programs.

3. Investments that support sustainability of coffee production:

Financial investments made by companies can range from support of large multi-stakeholder initiatives to investments in countries of origin to investments that support the farmers and mills supplying coffee to that company.



91% OF CONSUMERS

would like to see more of the products, services, or retailers they use **supporting worthy social and environmental issues** (Cone Communications)
Sales for brands with a demonstrated commitment to sustainability **grew 4%**

1. MEET DEMAND

- Meet needs of sustainability-conscious buyers and consumers
- Establish yourself as an industry leader
- Support brand development
- Engage and excite employees

25 MILLION SMALLHOLDER FARMERS

depend on coffee for their livelihoods (Fairtrade International)

2. DRIVE IMPACT

- Improve farmer and worker incomes
- Increase productivity
- Support environmentally sound production practices
- Invest in resilient communities
- Promote gender equality

85% OF CONSUMERS

would **stop buying products** if they learned a company's irresponsible or deceptive business practices (Cone Communications)
Sales for brands without a demonstrated commitment to sustainability **grew <1%**

3. MANAGE RISK

- Control reputation and press coverage
- Guarantee supply
- Avoid child and forced labor
- Meet and exceed regulations

COMMIT TODAY!

Join a growing movement working to make coffee the first 100% sustainable agricultural product.

WWW.SUSTAINCOFFEE.ORG



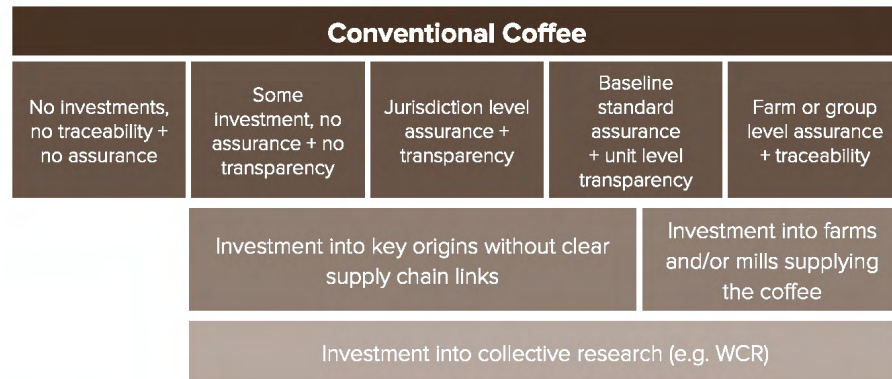
Not all coffee is the same, so not all sustainability strategies are the same.

Often the type of strategy selected is based on the type of coffee being purchased. This is due in part to the demand from the customer, price points and supply availability.

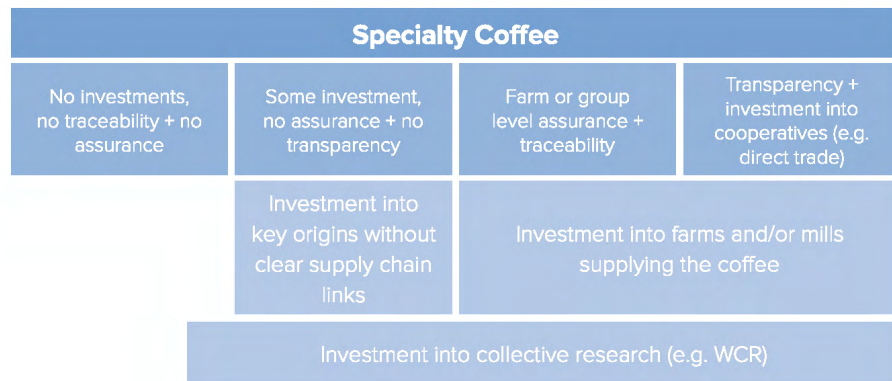
The following diagrams present an overview of different types of strategies frequently adopted by stakeholders in the conventional and specialty coffee markets. These are not intended to be progressions or rank one strategy against another. They

simply show the variation in strategies being implemented today.

Although sourcing commitments may only include a commitment to purchase sustainable coffee, we often find that leading companies are also making environmental, social and coffee productivity investments that support coffee farmers in origins they source from. We have included this in the diagram as we believe transitioning more producers to sustainable production will require additional investments.



Conventional coffee sustainable sourcing programs can range from investments in either research and/or origin all the way through to certified coffee sourcing coupled with investments



Specialty coffee sustainable sourcing programs tend to include a greater emphasis on traceability and assurance, although with direct trade programs there is a growing emphasis on direct investments into supplying cooperatives

DEGREES OF ASSURANCE

When seeking information, it's important to understand the level of credibility it has to the outside world (i.e. your customers) and the types of claims it will enable you to make.

While you may trust the information a supplier provides, the outside world might not. Society tends to have more confidence in information provided by a credible, neutral third party. Sustainability programs are no different. They tend to

move from relying initially on 1st party information from suppliers to 2nd party and on to 3rd party audits as they become mature and as companies seek to communicate externally on their progress.

It's important to note that none of these are completely foolproof against issues popping up in a supply chain.



SELECTING AMONG SOURCING STRATEGIES

Which is best for me?

It depends...on your business, on your values and on your knowledge of your supply chain and the needs of the coffee producers. Here are some key questions you can ask:

- What is your appetite for risk? Are you risk averse or a risk taker?
- What is your relationship with your suppliers? Do you know them? Do you know where your coffee is coming from? Does this change frequently or is it stable?
- What types of coffee do you source? What are the costs and price margins? How much do the various programs cost and how do they affect these margins?
- What feels right and is aligned with your company or organization?

A Balancing Act – Risk + Opportunity

Some sustainability initiatives emerge to address risks that threaten the reputation of a company. Certification and verification programs can help identify whether these issues are within your supply chain.

Addressing these concerns with suppliers often requires engaging with them and co-developing, co-financing and implementing solutions. Leading programs strike a balance between these two needs and find ways to partner with others to bring these to scale.



HOW DO I GET STARTED?

- Make the **business case** Internally (see Infographic).
- Review **corporate values and code of conduct** to **identify key principles** you want to stand behind
- **Engage with suppliers** to understand what they are doing to promote sustainability in the coffee value chain. Identify opportunities to build on and leverage this work.
- **Develop principles** to guide sourcing decisions and determine which types of programs align with these principles. Set minimums, etc.
- Determine **level of verification** you will require.
- **Communicate** the program with your suppliers.
- Develop and Implement **monitoring** approach for tracking and communicating progress and adapting the program as necessary
- **Pilot test** the program in select supply chains
- Revise and **roll out** across more of the business
- **Adapt** the program as needed





www.sustaincoffee.org



WHY PURCHASE SUSTAINABLE COFFEE?

WWW.SUSTAINCOFFEE.ORG

91% OF CONSUMERS

would like to see more of the products, services, or retailers they use **supporting worthy social and environmental issues** (Cone Communications)

Sales for brands with a demonstrated commitment to sustainability **grew 4%**

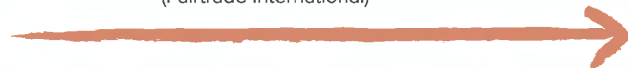


1. MEET DEMAND

- Meet needs of sustainability-conscious buyers and consumers
- Establish yourself as an industry leader
- Support brand development
- Engage and excite employees

25 MILLION SMALLHOLDER FARMERS

depend on coffee for their livelihoods (Fairtrade International)



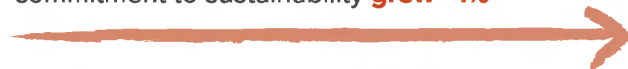
2. DRIVE IMPACT

- Improve farmer and worker incomes
- Increase productivity
- Support environmentally sound production practices
- Invest in resilient communities
- Promote gender equality

85% OF CONSUMERS

would **stop buying products** if they learned a company's irresponsible or deceptive business practices (Cone Communications)

Sales for brands without a demonstrated commitment to sustainability **grew <1%**



3. MANAGE RISK

- Control reputation and press coverage
- Guarantee supply
- Avoid child and forced labor
- Meet and exceed regulations

COMMIT TODAY!

Join a growing movement working to make coffee the first 100% sustainable agricultural product.

WWW.SUSTAINCOFFEE.ORG



SUSTAINABLE
COFFEE
CHALLENGE



SOURCING CASE STUDY: ALLEGRO COFFEE

As a leading coffee roaster, Allegro Coffee has long been committed to sourcing sustainable coffee and cultivating lasting relationships with farms and farmers who demonstrate a similar appreciation for sustainably producing coffee.

© Thomas Muller

Sourcing Commitment

Allegro commits to sourcing from farms that protect the ecosystem and maintain biodiversity, are free of forced labor and child labor, pay at least a minimum wage and have waste water treatment systems.

TARGET DATE: 2018

Partners in Sustainable Sourcing

Allegro partners with its importers and exporters, such as ECOM, Falcon and Coffee Source.

Business Case

Allegro's commitment to sustainable sourcing began since its launch. Allegro states that they decided to have a stronger emphasis on documentation, traceability and transparency when Whole Foods requested more details about their supply chain activities.

Strategy

Allegro maintains a sustainability strategy of identifying and working with specific communities by investing in their capacity to adopt sustainable practices.

Progress

Allegro shares that they are halfway in meeting their sustainability commitments. In Latin America, Allegro has 100% traceability of their supply chain, which is about 50% of their total supply. Allegro is now working on extending their sustainable sourcing strategies to global markets, specifically in Africa, in order to mimic their success in Latin America.

Monitoring & Evaluation

Allegro monitors progress by providing a self assessment questionnaire with key indicators to its suppliers. Allegro then serves as an auditor by checking their suppliers self-reporting. Allegro's investments in farms are monitored every three months through Skype meetings, photos, and progress reports.

Key lessons

- Keep it simple and focus on the values that are important to your company.
- Focus on your specific supply chain by identifying who is in it and who making an impact on them.
- Establish full transparency in the supply chain. To do so, it helps to break down the amounts of how much each actor is making.

Advice to Others

Allegro emphasizes on the social aspect of sustainability. Maintaining the quality of coffee is important, but to Allegro the quality of life of all the workers on the farms are important as well. The company shares that strategies to achieve sustainable sourcing will be different based on company characteristics and size. In Allegro's case, as a smaller company, they learned to focus on their specific supply chain rather than trying to solve all the coffee problems in the industry.



“Coffee is more than just roasting beans. It’s the craft and the community. We value both and will always take our sourcing methods seriously, doing what’s right every step of the way.”

–Allegro Coffee



SOURCING CASE STUDY: EFICO

Founded in 1926, EFICO is a green coffee trading company with strong family values and passion for the product. EFICO is committed to quality, sustainability and transparency in its business activities as well as maintaining a personalized approach. EFICO strongly believes that innovation and quality go hand in hand while minimizing any negative environmental impact. Their ambition towards a sustainable supply chain is reflected in their state-of-the-art green coffee warehouse, SEABRIDGE, their EFICO Foundation, their strong belief in the ten principles of the UN Global Compact, to which it was the first coffee trader to sign up to in 2003, and their commitment towards the Sustainable Development Goals.

© Cristina Mittermeier

Sourcing Commitment

EFICO will source 40% of their volume verified or certified against sustainability standards. By 2025 this commitment is projected to reach at least 50%. EFICO will continue to invest in solid and long-term business relations and win-win partnerships. By 2020, more than 80% of EFICO's volume will be sourced from cooperatives or local exporters, positively impacting local development, decent work and economic growth.

TARGET DATE: 2020

Partners in Sustainable Sourcing

EFICO works together with their customers to provide support in responsible consumption and advisory services with options for sustainable sourcing in their supply chains. EFICO also works alongside its private foundation – The EFICO Foundation - to support and improve the daily lives of those living in coffee communities. The EFICO Foundation partners with over 60 organizations.

Business Case

According to EFICO, sustainability is in the group's DNA; it is a part of who they are. EFICO has a personal relationship with their suppliers, which allows them to source at least 80% of coffee directly from cooperatives, unions, or local exporters. To EFICO, it is important to have strong partnerships and be locally present in order to connect with the farmers.

Strategy

EFICO sources via local partners and has offices in origin. They keep their customers and key stakeholders informed about the importance of sustainable sourcing and have a direct leverage with their EFICO Foundation to positively impact coffee families' livelihoods and prosperity.

Progress

EFICO takes pride in the achievements they have made whether it be on their sustainably sourced supply, sustainable investments in a state-of-the-art warehouse to store coffee, or in their foundation that makes a difference in the daily lives of coffee families.

In 2017, they have already crossed the first milestone in sustainably sourcing: 51% of the sourced volume is certified or verified against sustainability standards and 87% is sourced via local exporters, cooperatives and unions. They anticipate that as clients are demanding more sustainable coffees, they will be able to become more ambitious.

Monitoring & Evaluation

In early 2016, EFICO formulated its commitment towards 5 SDGs, amongst which SDG 8 (Decent Work & Economic Growth) and SDG 12 (Responsible Consumption and Production) are directly linked with their strategy. EFICO states that they are still in an early phase of evaluating long term impact. In 2017, 8 projects over 3 continents within the EFICO Foundation result in direct improvement of livelihood

and prosperity of 810 individuals, and indirectly of over 2,200 coffee families. EFICO acknowledges the importance of keeping focus, measuring results and working towards those SDGs where their commitments derived from.

Key lessons

- Sourcing approach must be implemented in a holistic manner
- Stay true to the company's values
- Make sure to create a link between the coffee farmer and your clients

Advice to Others

EFICO advises companies in the coffee industry to listen to the voice of the coffee farmer. Transparency within the supply chain and creating win-win partnerships are essential to make coffee the first sustainable commodity worldwide. Leading with ambition and focus while staying authentic and true to your company's values and ethical stance is key.



“Knowledge transfer, climate smart agriculture and sustainable income increase for farmers are essential to enhance the transition to a more sustainable coffee future.”

–EFICO Group CEO Michel Germanès



SOURCING CASE STUDY: FARMER BROTHERS

Founded in 1912, Farmer Bros. Co. (“Farmer Brothers”) is a leading national roaster, manufacturer, wholesaler and distributor of high-quality coffees, teas, spices and culinary products. Farmer Brothers has a vested interest in the social, environmental and economic changes and developments within the coffee industry. Farmer Brothers has created a strong foundation of sustainability that extends beyond their internal processes to include business partners and vendors within the supply chain.

© Cristina Mittermeier

Sourcing Commitment

Farmer Brothers commits to ethically source 100% of their coffee.

TARGET DATE: 2025

Partners in Sustainable Sourcing

Farmer Brothers partners with organizations such as Expocafe, FNC Antioquia, FNC Norte del Valle, Solidaridad, CRECE, Aldea Global, Lutheran World Relief and COSA.

Business Case

Farmer Brothers believes that the quality, safety, and traceability of the ingredients and components that their partners supply are a key part of their sustainability model. Within the Farmer Brothers Social, Environmental and Economic Development (SEED) Framework, they set out to accomplish their responsibly sourcing goals using social, environmental, and economic pillars. Through SEED, they seek to create a sustainable business that can nurture communities, strengthen their supply chain, create long-term viability, and help manage business risk. With a cross-functional team to oversee their supplier portfolio and procurement practices—including members of their Green Coffee, Procurement, Quality Assurance, Risk Management, and Sustainability departments—Farmer Brothers takes a purposeful approach to responsible sourcing.

Strategy

In addition to Farmer Brothers direct trade volume, a core component of their responsibly sourced portfolio is built on their commitment to purchasing certified and verified coffee. Farmer Brothers offers products under the Fair Trade Certified™, Rainforest Alliance Certified™, USDA organic, and Non-GMO Verified labels. Additionally, they have joined a multitude of collaborative trade and leadership efforts that will bolster the resiliency of their supply chain, including World Coffee Research and the Coalition for Coffee Communities.

Progress

Farmer Brothers reports that their responsibly sourced coffee now constitutes 24 percent of their portfolio, up from 17 percent in 2015.

Monitoring & Evaluation

Farmer Brothers partners with the Committee on Sustainability Assessment (COSA) to collect baseline data on coffee growers in several communities in Colombia; implementing technical assistance and capacity-building programs based on that data. Then, Farmer Brothers monitors and evaluates the social, environmental, and economic impact of their interventions. With this data-driven action and assessment, Farmer Brothers can see exactly how well their interventions and support programs

are working. Using these methods, they can identify new opportunities to make coffee more sustainable.

Key lessons

- Understand origin limitations and work with partners to find manageable solutions
- Don't expect "one size to fit" every origin approach
- Collect real farm level data from independent parties to verify your approach
- Achieve consensus with coffee growing partners on the right approach to take
- Continually check-in on programs to verify they are achieving the desired results, and adapt methods if needed

Advice to Others

- Set an ambitious target to inspire action
- It takes all teams working together and believing - Sustainability, CSR, Finance, Marketing, Procurement, R&D to create the right environment for positive impact and progress; therefore, the proposition and business case must appeal to all
- Sharing the progress that others have made, does help to encourage businesses and companies to do their part.
- Work with customers to convert conventional supply chains to ethically sourced supply chains
- Invest in coffee origin sustainability to amplify access to ethically sourced coffees
- Engage with the industry to learn and share best practices



“We believe we can advance change within our industry. Working together, we can push the limits of existing standards and realize our collective potential in ways that will make a positive impact on our industry and the world around us.”

–Scott Siers, SVP & GM



SOURCING CASE STUDY:

KEURIG GREEN MOUNTAIN

Keurig Green Mountain (“Keurig”) is a leader in specialty coffee and innovative single serve brewing systems. Committed to delivering exceptional coffee for more than 35 years, today Keurig® brewers and single serve hot beverages are in more than 20 million homes and offices throughout North America. At Keurig Green Mountain, they work to design, source, and manufacture products that benefit the communities they touch while minimizing their environmental impact. From the design of their beverage systems and the cultivation of coffee, all the way through end-of-use disposal, Keurig aims to understand their impacts and leave communities and people better off as a result of their business.

© CI/photo by Tory Read

Sourcing Commitment

Keurig has committed to source 100% of their coffee responsibly and to engage 1 million people in its coffee supply chains to significantly improve their livelihoods.

TARGET DATE: 2020

Partners in Sustainable Sourcing

Partnership is a core value for Keurig. The company also views partnership as vital to achieving lasting impact at source; certifying and verifying organizations do more than check the box for Keurig. They are partners. Keurig seeks to support them in continuously improving the impact and value proposition of their models. In addition, Keurig works with numerous implementation partners – NGOs, research organizations, and suppliers – who bring its impact investments to life in the field. These include organizations such as World Coffee Research, CRS, and Root Capital.

Business Case

Achieving a positive impact at origin is the primary driver for the work. Keurig’s commitment to responsible sourcing and improvement of livelihoods also helps to ensure a secure supply of high quality coffee and the creation of a strong and resilient value chain. The ability to connect brands, consumers, and employees to the stories and people behind the beans is another benefit.

Strategy

Keurig tried out different strategic approaches, including contracting for their own compliance audits, before deciding to rely on qualified certification and verification schemes. The qualification process includes rigorous benchmarking against Keurig’s Responsible Sourcing Guidelines and other widely accepted standards. Qualifying schemes currently include Fairtrade, Rainforest Alliance, and UTZ. The strategy is intentionally inclusive and can expand to include new and innovative tools in development today. The strategy seeks to achieve positive impact at source while also being flexible and scalable. A key aspect of the wider strategy is that it pairs compliance-focused work with targeted impact investments that address the root causes of coffee’s top sustainability challenges, such as climate change and price risk management. The investments also leverage wider funding sources to achieve greater impact.

Progress

Currently, 31% of Keurig’s coffee meets its definition of responsibly sourced. This achievement has been enabled by a long-term focus on traceability, with 85% of its coffee portfolio traceable at least to exporter region. In addition, over 485,000 people in its coffee supply chain have been engaged in projects to improve their livelihoods.

Monitoring & Evaluation

In addition to tracking the percentage of their volume that is purchased under certified/verified terms, Keurig works with coffee sustainability partners to improve their ability to track and articulate impact – on farmers, coops, and the market. Likewise, Keurig also collaborated with academic and development partners to develop a comprehensive methodology to track the number of livelihoods significantly impacted by its investments, pushing the envelope to go beyond outputs and to measure outcomes and impacts across a portfolio of programs.

Key lessons

- Let impact be your key objective and drive towards it with focus.
- Do your homework. First learn from available data and experience.
- Try not to reinvent the wheel. Evaluate if existing schemes or products can meet your company's needs.
- A gap analysis (your needs vs. what is on offer) is a useful conversation starter that may lead to improvements in existing schemes and products that will have a positive impact beyond your supply chain.
- A holistic strategy must include engagement on both compliance and livelihood issues – one without the other leaves a business open to risk.

Advice to Others

Keurig shares that developing and implementing sourcing commitments has been a significant driver of change within the business. And while any company's strategy will inevitably be shaped by factors such as the size of the budget, the volume and type of coffee purchased, and an understanding of stakeholder restraints and expectations (i.e. if you are sourcing coffee on behalf of others, who may have their own preferences/programs), the most important recommendation is to lead with impact. Impact should be the North Star that guides decision-making across all aspects of a company's sustainable sourcing strategy.



“Our progress on the sustainability front will enable growth for the Company, opening doors of opportunity for our employees, our customers, and our business as a whole.”

**–Robert (Bob) Gamgort,
CEO**



SOURCING CASE STUDY: MOYEE COFFEE

Moyee Coffee is the world's first FairChain company, and is committed to producing sustainable coffee while creating skilled roasting jobs. Moyee's philosophy centers around the FairChain model by creating a 50/50 enterprise with local entrepreneurs. Within the model Moyee provides the 20% FairChain premium for the coffee farmers. With roasting and packing in the country of origin, Moyee is leaving 300% more money in the coffee-producing country.

© CI/photo by Miguel Ángel de la Cueva

Sourcing Commitment

Moyee commits to work directly with smallholder farmers and procure premium coffee at a premium price. By partnering with sister company FairChain Farming they aim to train 300 smallholder farmers with 25 trainers, through the FairChain train-trainer-program in Limu, Ethiopia, by 2018.

TARGET DATE: 2020

Partners in Sustainable Sourcing

Moyee partners with its 350 farmer families and small coffee farms, and a local company in Ethiopia called Dedessa which provides the use of their washing station. Moyee also partners with Bext360 and their own team of block chain developers.

Business Case

The FairChain Farming business case from which Moyee sources is based on the FairChain principles. The goal is to reach a living income for the farmers, by increasing yield through training in which they invest from their own coffee revenues, by value chain integration (washing station) and by scaling up (model farm).

Strategy

For Moyee, the strategy is as straight forward as

establishing agreements between the companies and the farmers, purchasing the cherries and providing a washing station. Moyee's commitment is paying 20% on top of the established market price in order to adhere to their FairChain philosophy. At the end Moyee is able to receive a high quality bean while fairly rewarding the farmer. Buying cherry is short term, the goal is for farmers to own and manage the washing station and act as a serious green bean supplier for western roasters.

Progress

Moyee shares that for the last harvest they have fully reached their sustainable sourcing commitment. As Moyee looks into the future, their commitment is more about helping the farmers reach a living income that allows them to live a dignified life. At the end, Moyee's ultimate goal is to cultivate long-term business relationships with farmers while helping them increase their yields and quality. Eventually enabling each farmer reach a living income from growing coffee.

Monitoring & Evaluation

Moyee monitors progress by using blockchain technology. Through this method, they are able to keep track of many parameters efficiently and accurately. Moyee tracks other indicators such as soil fertility, biodiversity and other endpoint indicators relating to the farmers lives. Moyee uses the International Wealth Index to measure and track the economic situation of their farmers. Moyee also states

that it provides a self assessment questionnaire that assists in determining farmers wellbeing and best practices.

Key lessons

- Maintain focus on the farmer
- Importance in choosing the right communicator of your message
- Be persistent and maintain an open communication channel with your providers

Advice to Others

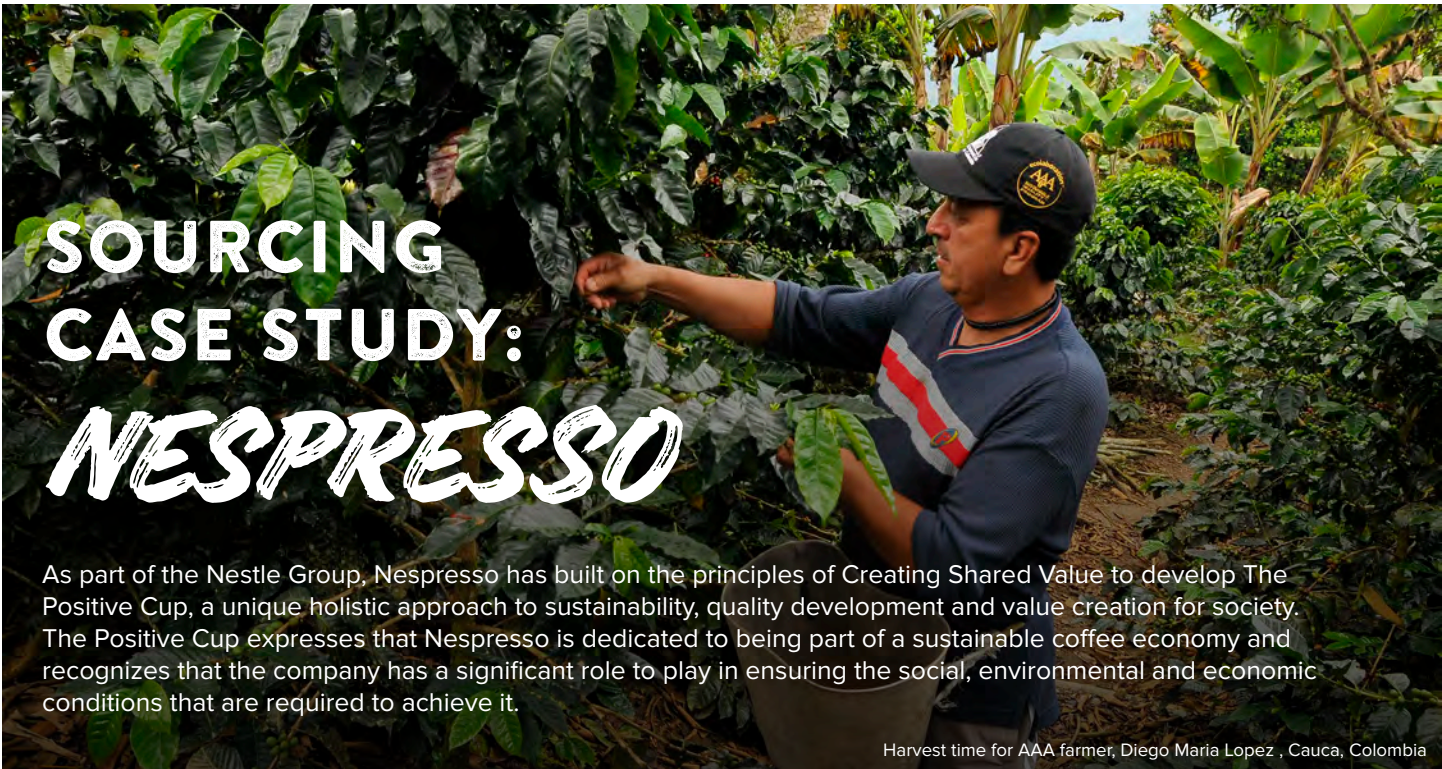
Moyee emphasizes the importance in starting a sustainable sourcing journey with a mission in mind. Moyee states that they recognize that there was something wrong with the coffee industry so they started working with farmers appreciating the work that they do and in turn rewarding them accordingly. Moyee also states that it is important to get to know the producers of your coffee at a personal level. This is hard to do, but at the end this relationship is an asset that can give you a competitive advantage.



© UN Photo/Martine Perret

“For decades the world has enjoyed the finest of Ethiopia’s Arabica coffee, while the majority of the profit has failed to reach the farmers. My vision for Moyee is to establish the world’s first specialty coffee brand that is as equitable as it is delicious. A company that produces quality beans and still delivers fair value.”

– Ahadu Woubshet, Managing Partner Moyee Coffee, Ethiopia



SOURCING CASE STUDY: NESPRESSO

As part of the Nestle Group, Nespresso has built on the principles of Creating Shared Value to develop The Positive Cup, a unique holistic approach to sustainability, quality development and value creation for society. The Positive Cup expresses that Nespresso is dedicated to being part of a sustainable coffee economy and recognizes that the company has a significant role to play in ensuring the social, environmental and economic conditions that are required to achieve it.

Harvest time for AAA farmer, Diego Maria Lopez , Cauca, Colombia

Sourcing Commitment

The Positive Cup program incorporates ambitious goals in the areas of coffee sourcing and social welfare; aluminum sourcing, use and disposal and resilience to climate change. The coffee sourcing specific commitment ensures the resilience of coffee farms and communities by:

- **Sourcing towards 100% of our permanent coffees through the AAA Sustainable Quality(TM) Program,**
- **Increasing the share of certified coffees in the AAA supply**
- **Strengthen coffee landscape resilience through extensive tree planting: 5 million trees.**

TARGET DATE: 2020

Partners in Sustainable Sourcing

Rainforest Alliance, Fairtrade International, Fairtrade USA, Pur Projet.

Business Case

The company understands and respects the responsibility that it has in creating a sustainable coffee economy, while ensuring it can deliver quality coffee to its consumers. Therefore, sustainability is a core part of the way the company does business. Nespresso's approach is to support producers to better manage their farms, their businesses and their land. By doing so, the company is

able to secure the supply of highest quality crops that meet the specific quality and aroma requirements. This not only delivers a better in-cup result for our consumers but also greater income, security and stability for the farmers.

Strategy

In 2003 the Nespresso AAA Sustainable Quality™ Program (AAA) was launched in partnership with Rainforest Alliance. In addition to ensuring farmers comply with the Tool for the Assessment of Sustainable Quality (TASQ™), the company assists farmers in achieving certification standards such as Rainforest Alliance and Fairtrade International.

To make this happen, the company works with a network of agronomists and partners on the ground to provide training and technical assistance on coffee quality, farm productivity and sustainable agriculture to farmers. In short, the program creates favorable conditions for over 75,000 farmers in 12 countries benefiting from premiums, the expert assistance of agronomists, plus a wealth of other pioneering initiatives. Additionally, together with the Colombian Ministry of Labor, the Agudas Coffee Growers Cooperative and Fairtrade International (FLO), Nespresso developed in 2014 the first-ever retirement savings plan for coffee farmers reaching approximately 2,000 participants.



Nespresso also has developed a crop insurance scheme with Blue Marble Microinsurance, Columbia University and Agrilogic to be piloted with 3,000 farmers from Caldas, Colombia during the 2018 harvest. Lastly, to address difficult systemic challenges, Nespresso is involved in a range of coalitions with organizations that bring relevant expertise and strong commitment to transform practices for a more sustainable future: The Manos al Agua platform in Colombia, The Cerrado das Aguas consortium in Brazil and the Sustainable Coffee Challenge.

Progress

Nespresso shares that as of 2017, they have been able to source 90% of their permanent coffees through the AAA Sustainable Quality™ Program. They have also been able to increase the share of certified coffees in AAA to 51% of the total volume, ie +21 pp. vs 2014. To promote the approach of regenerative agriculture, over 2.5 million native trees have been planted in and around coffee farms since 2014, in Colombia, Ethiopia and Java. Since 2014, over MCHF 150 have been invested in the sustainable production of coffee.

Monitoring & Evaluation

Nespresso has been engaged in better understanding the outcome of the AAA Program. In 2015, a comprehensive “Theory of Change” was developed together with the Rainforest Alliance and CRECE, to define the pathway between field activities and long-term impact. To monitor this theory of change, Nespresso consolidates all assessments in a management system named F.A.R.M.S. (Farm Advanced Relationship Management System). Third party verification of adoption of practices as well as insight into the critical drivers of change are also stored in this system.

Key lessons

Systems transformation is a long journey that requires investment from the private sector to start with and the appreciation of consumers to make it viable on the long term.

Advice to Others

- Understand what really matters in your value chain
- Build strong relationship with producers by setting up the processes and the support needed
- Collaborate with a full range of organizations (NGOs, Academics, financial origination) to drive innovation and amplify impact
- Be transparent and welcome external advice
- Integrate sustainability into your value proposition to engage with consumers



“Our sustainability investments are part of the brand experience and valued by consumers in every cup.”
–Jean Marc Duvoisin,
CEO Nespresso



SOURCING CASE STUDY: S&D COFFEE & TEA

Founded in 1927, S&D Coffee & Tea is a major manufacturer of coffee and tea for the food service, convenience and consumer packaged goods industries. S&D's capabilities extend into the evolving world of extracts and ingredients, creating new possibilities for culinary applications and exciting new beverage choices for customers. At S&D, sustainable sourcing is focused on resilient supply chains for coffee and tea.

© S&D Coffee & Tea/Otto Meija

Sourcing Commitment

S&D supports the production of 150 million lbs. of sustainable coffee via its sustainable sourcing platform Raíz Sustainability® together with certified coffee purchases, impacting the livelihoods of more than 10,000 farming families.

TARGET DATE: 2020

Partners in Sustainable Sourcing

S&D works with Conservation International (CI), the Committee on Sustainability Assessment (COSA) and SupplyShift to develop and implement the Raíz sustainable sourcing platform. CI and COSA have served as supports to establish a robust, reliable and credible program according to best-in-class practices, while SupplyShift provides support for the Raíz data management system. S&D also partners with trading companies and leading cooperatives including ECOM, OLAM, Volcafe, Cooperativa los Andes, ExpoCafe, Perhusa and others to effectively implement and maintain the Raíz objectives at the ground level.

Business Case

S&D knows that sustainable investments and the proactive management of risk drive the success and profitability of our business. Embedding sustainable sourcing throughout the business and creating shared value within the supply

chain lead to long-term success with social, environmental and economic impact.

Strategy

Advancing resilient supply chains means holding partners accountable for sustainable practices.

Raíz Sustainability, S&D's sustainable sourcing platform for coffee and tea, is rooted in impact. An inclusive approach provides smallholder farmers with immediate access to training and technical assistance to help adopt best practices in agriculture and business management. S&D works closely with partners towards measurable improvement in long-term solutions to sustainability challenges.

Raíz focuses on three key impact areas:

- Social (fair labor practices)
- Environmental (soil health, water management and forest conservation)
- Economic (productivity and cost management)

Progress

Now, after more than three years of implementation, S&D's Raíz platform has reached a maturity phase. S&D continues to make refinements as they move forward from the initial investments. The company is currently evaluating the impacts at the farm level after the first three-year cycle,



responding to partner feedback and extending the platform to other commodities like tea.

Monitoring & Evaluation

S&D uses key performance indicators (KPIs) to evaluate success at the farm level. Partners play a critical role in this process, enforcing the credibility of S&D's commitments through the assurance of accurate and unbiased reporting in the verification process. In particular, COSA has helped S&D design an optimized information architecture that is fully aligned with international norms.

Key lessons

- Foster both competition and collaboration by sharing best practices
- Internal communication is key in order to acquire the necessary input and different perspectives when formulating a company sustainability platform or policy
- Start the marketing process early, so the whole story can be told

Advice to Others

S&D advises companies in the coffee industry to “go all in” and invest in making a sustainable sourcing commitment. Realize that it is a smart thing to do from a business perspective. S&D emphasizes that no one participant knows or has all of the right solutions, encouraging everyone involved to share lessons learned and best practices with the industry. A key lesson learned by S&D, and paramount to their success, is the importance of engaging personally and regularly with partners at origin. By doing so, you are helping them understand the sourcing guidelines, build capacity and leverage local expertise.



“Sustainable sourcing simply makes good business sense. It equates to better business performance, making our supply chain partners, us and our customers stronger while directly contributing to the bottom line.”

–David Piza, Director of Sustainability



SOURCING CASE STUDY: STARBUCKS

As an industry leader, Starbucks is committed to help farmers overcome the challenges facing coffee communities by purchasing ethically sourced, high-quality coffee. The company invests in coffee communities, celebrates sharing technical coffee knowledge and seeks to constantly innovate with new approaches. To date, Starbucks has invested over \$100 million to support coffee communities, improve the resilience of coffee supply chains and ensure a long-term supply of high-quality coffee for the industry.

© Starbucks

Sourcing Commitment

Starbucks commits to ensure 100% of their coffee is ethically sourced through C.A.F.E. Practices or another externally audited system.

TARGET DATE: ONGOING

Partners in Sustainable Sourcing

In 2004, Starbucks partnered with Conservation International to develop purchasing guidelines to source coffee according to social, economic, environmental and quality standards. The creation of the Coffee and Farmer Equity (C.A.F.E.) Practices led Starbucks to partner with SCS Global Services, an independent organization that oversees the verification system of supplier compliance to the standards. Starbucks also partners with all of its suppliers by investing in them and providing support to foster continuous improvement towards growing C.A.F.E. certified coffee.

Business Case

Starbucks believes that business success is directly linked to the success of the hundreds of thousands of farmers who grow their coffee. By sustaining coffee and strengthening coffee communities, Starbucks secures an abundant supply of high quality, responsibly grown and ethically traded coffee. Investing in smallholder farmers helps guarantee transparency, traceability and security

in their coffee supply chain while minimizing vulnerability and risk. Starbucks opted to develop their own sustainable verification model, in 2004 in partnership with Conservation International, that built upon existing certification systems, which at the time, the company felt did not comprehensively encompass all aspects of sustainability including quality, economic transparency, and the social and environmental aspects of coffee growing. C.A.F.E. practices used elements from existing systems but also added other criteria such as quality metrics.

Strategy

The cornerstone of Starbucks ethical sourcing approach is Coffee and Farmer Equity (C.A.F.E.) Practices, one of the coffee industry's first set of sustainability standards, verified by third-party experts. C.A.F.E. Practices has helped Starbucks create a long-term supply of high-quality coffee and positively impact the lives and livelihoods of coffee farmers and their communities. Today, C.A.F.E. Practices includes over 300,000 coffee farmers in 25 countries that are committed to improving working conditions and spanning more than 170,000 hectares of land committed to sustainable growing practices. In addition to C.A.F.E. Practices, Starbucks uses financial incentives, such as price premiums, loan programs, long-term contracts and assured market access. To create a holistic support model approach that benefits smallholders, Starbucks provides technical assistance through their Farmer Support Centers (open-source agronomy training), the Global Farmer Fund program (providing access to credit for farmers) and the



One Tree for Every Bag initiative (providing rust-resistant coffee trees to the farmers who need them most).

Broader picture of ethical sourcing investments:

- Sustainable Coffee: Starbucks is working to increase the prosperity and resilience of the one million farmers and workers who grow Starbucks coffee around the world by investing in coffee communities, sharing technical coffee knowledge, and innovating with new agricultural approaches.
- Sourcing commitment: Strive to offer 100 percent ethically sourced coffee. By joining with others in the industry, Starbucks hopes to make coffee the world's first sustainable agricultural product.
- Planting trees: Provide 100 million trees to farmers by 2025, part of a commitment to one billion coffee trees through the Sustainable Coffee Challenge.
- Global Farmer Fund: Invest \$50 million in financing for farmers by 2020.
- Open-source agronomy: Train 200,000 coffee farmers by 2020 to improve the long-term sustainability of their crops and livelihoods through Starbucks Farmer Support Centers and other innovative efforts.

Progress

To date, 99% of Starbucks coffee is ethically sourced through C.A.F.E. Practices and more than one million farmers have benefited from the program. The company continues to move forward with renewed sourcing commitments and goals to improve the livelihoods of coffee communities, and is consciously striving to reach the “critical last 1%”. Starbucks hopes to extend lessons-learned from the C.A.F.E. Practices program to the entire coffee industry and encourages an “open source” approach by sharing tools, resources and best practices so the industry can unite in achieving the long-term sustainability of coffee.

In Starbucks latest impact assessment for years 2011 to 2015, there has been growth in the number of farms in the program, growth in coffee area and growth in number of total workers hired by participant entities. Performance in the program has demonstrated improvements through time, including the scoring obtained in the C.A.F.E. Practices verification and the proportion of supply chains obtaining a strategic approval status, which is the highest status of compliance obtained in the C.A.F.E. Practices program. Program retention has also grown by 3% in the period of 2011-2013, while the number of supply chains improving approval status in re-verification has also increased.

Monitoring & Evaluation

The C.A.F.E. Practices program tracks 200+ indicators that assess the social and environmental performance of farms, mills and smallholder support organizations within their



coffee supply chain. The program relies on field visits by third-party organizations, which occur on a one to three year cycle based on supplier performance. The company also upholds 22 zero tolerance indicators that serve as minimum requirements for C.A.F.E. Practices participation among suppliers.

Key lessons

- Reaching 99% isn't the end of the journey, and focusing on the last 1% will ensure investments in long term sustainability of all coffee.
- Continuous improvement is important to incorporate into your approach not only for farmers but other supply chain partners. One size doesn't fit all.
- Importance of self assessment, refinement and continuous innovation in your approach.

Advice to Others

- Setting goals with broad, long-term impact, even if it is incremental, has vast influence and adds to the momentum of reaching our goal where all coffee is sustainably sourced
- Learn from others and ask questions. When we were starting C.A.F.E. practices, we learned from other certification and validation programs that already existed and immersed the leaders of the company in the strengths and potential gaps of each.
- Engage your own employees and make it personal. Starbucks constantly thinks about how to make ethical sourcing commitments and C.A.F.E. practices more understandable and relatable to our more than 300,000 partners (employees) worldwide who wear the Green Apron and are responsible for the “last 10 feet” of the coffee journey. We also regularly bring partners to origin to see it firsthand the role of the farmer and the “first 10 feet” of coffee.





COFFEE AND FOREST MAPPING & MONITORING

To better understand the current coffee production footprint and monitor how this is changing over time in order to identify areas of greatest risk to deforestation and those presenting the greatest opportunity for coffee to contribute to reforestation.

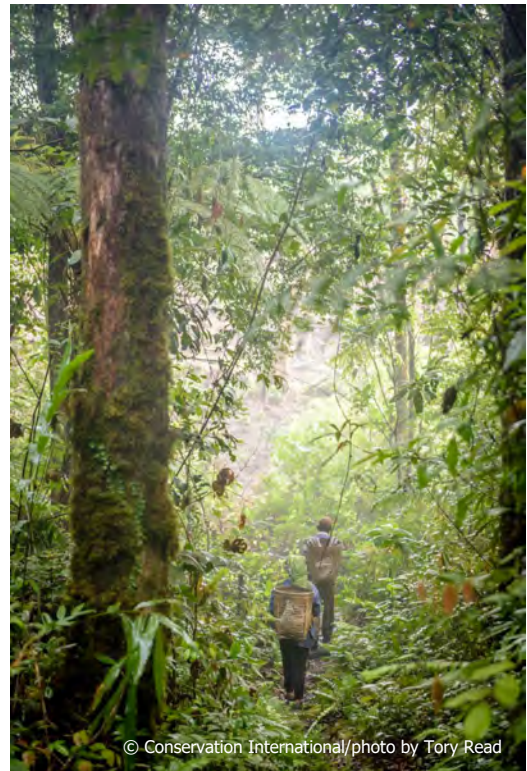
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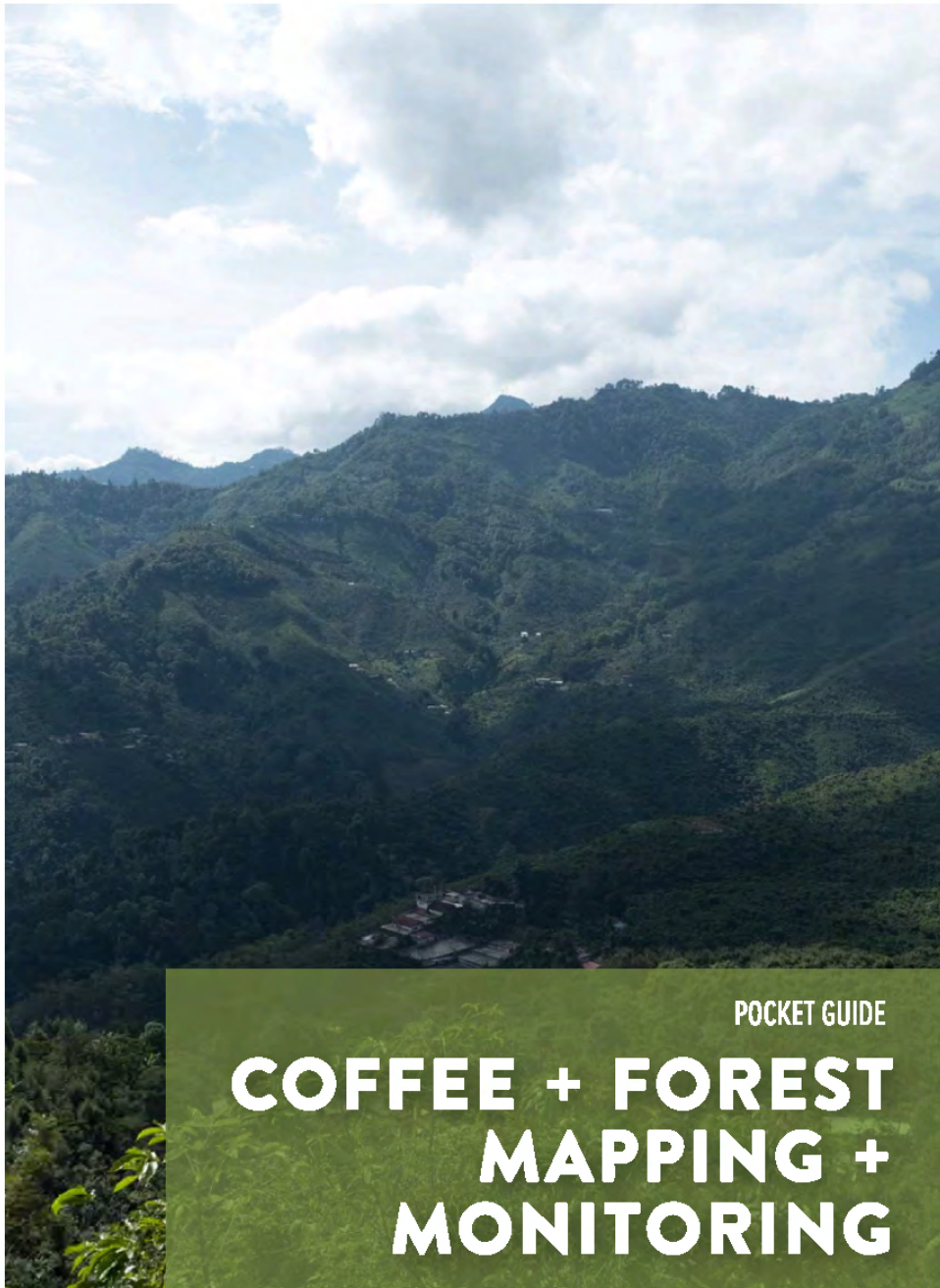
MAPPING + MONITORING COFFEE + FORESTS NETWORK MEMBERS

1. 35 North Coffee*
2. African Fine Coffee Association (AFCA)*
3. Arizona State University*
4. Caffè Ibis Coffee Roasting Co.*
5. Center for Coffee Research and Education*
6. Conservation International*
7. Fairtrade International
8. Hesselink Koffie*
9. International Center for Tropical Agriculture (CIAT)*
10. Pur Projet*
11. Rainforest Alliance*
12. Starbucks*
13. The Coffee Source*
14. The Sustainability Consortium*
15. Tuungane Women's Coffee Cooperative*
16. UTZ*
17. Valuing Nature
18. World Coffee Research (WCR)*

*Denotes Sustainable Coffee Challenge partner



© Conservation International/photo by Tory Read



UNDERSTANDING DEFORESTATION RISKS IN COFFEE

Growing coffee takes land. Growing more coffee could mean using more land – potentially doubling the current 10M hectares of land used to supply our morning cup. 60% of the land suitable for coffee production is forest. Only 20% of this is under any formal protection. Meeting future demand for coffee could come at the expense of forests if we as a sector are not careful.

That's why we need to understand the relationship between coffee and forests. Where is the coffee being grown today?

How does this relate to forests? How is this changing over time? We are not able to predict future areas of deforestation. And it's even difficult to understand what is happening today. But there are tools and resources that can help us begin to understand the risks and opportunities.

This short guidance document sets forth some key questions and tools that can help companies, governments and other actors get started in understanding the relationship between coffee and forests.



UNDERSTANDING STAKEHOLDER INTERESTS AND THEIR NEEDS

Deforestation and forest conservation are complicated issues that affect a wide variety of stakeholders ranging from producers, governments, companies, donors and financial institutions. Each has an interest in showing that their work is effective in eliminating deforestation from coffee production.

This requires data and tools that are fit for purpose. The following diagram shows how the existing data and tools support the range of stakeholders and their interests. It also identifies any additional information, incentives, policies or enforcement mechanism necessary to further support their goals and interests.

Producers



Interest: Show they are addressing deforestation in coffee production (market access, incentives).

Needs:

Policy + market incentives for conservation of remaining forest areas
Market incentives for investing in 3rd party assurance of these practices and sharing information with the downstream supply chain.

Producing Country Governments



Interest: Show they are addressing deforestation in coffee production.

Needs:

Identify areas of greatest opportunity for productivity enhancement without driving deforestation (e.g. low deforestation x low yields).
International policy +market incentives for conserving forests and collecting and sharing information on coffee producing areas.

Companies (retailers, roasters, traders)



Interest: Show their supply chain is free of deforestation + that investments are not driving deforestation.

Needs:

Policy + market incentives for zero deforestation in coffee supply chains.
Understand where deforestation risks are and the role of coffee as a driver.
Examples of how origin investments include safeguards and monitoring protocols to ensure against deforestation.

Donors/Financial Institutions



Interest: Show that investments are not leading to deforestation and/or are effective in addressing it.

Needs:

Risk profiles of various regions.
Types of safeguards needed to mitigate risks related to investments.

PEOPLE NEED COFFEE TO THRIVE, AND COFFEE NEEDS PEOPLE AND NATURE TO THRIVE

HOW CAN WE BETTER UNDERSTAND THE RELATIONSHIP BETWEEN COFFEE AND DEFORESTATION USING EXISTING TOOLS?

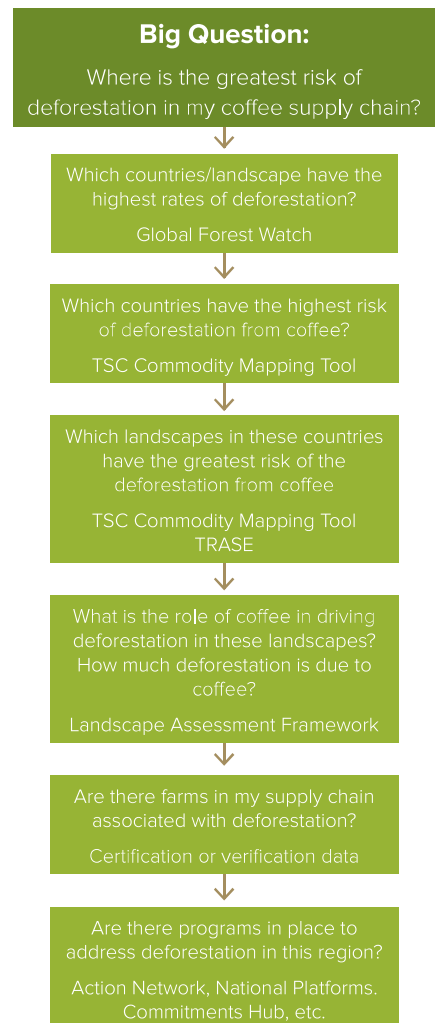
Actors throughout the coffee value chain are trying to identify where coffee is a driver of deforestation. Understanding risk is a discovery process like peeling back layers of an onion.

We can start with trying to understand which countries have high deforestation risks, then look at these areas and their overlap with coffee producing regions.

Once we understand this, we can drill down to understand which landscapes pose the greatest risks and determine the role of coffee. If a supply chain is certified or verified, there may be data to mine to understand whether farmers are in compliance with zero deforestation indicators.

If deforestation is an issue, supply chain actors will need to engage with suppliers and understand the root causes, which could include lack of policy, lack of enforcement, insecure land tenure, climate change among others.

Knowing this will help identify the most effective actions. Specific interventions can range from engaging with the suppliers to reforest, discontinuing to source from that supplier, or working in partnership with other roasters, traders, producers and government agencies to develop improved policies, incentives and enforcement programs to mitigate the issue.



GETTING ANSWERS TO KEY QUESTIONS

A number of tools and resources are available to help decision-makers begin to understand the risks and opportunities associated with deforestation and coffee production. The following table provides an overview of some specific questions to start with, the data necessary to answer those questions and links to specific tools

and approaches that can help answer the questions. As you move down the table, the questions become more specific to a place (landscape or farm) and to the role of coffee in driving deforestation. More information on the tools and resources is available in the one-page overviews that follow.

Question	Data Needs	Tools + Resources
Which countries or landscapes have the highest rates of deforestation?	Deforestation rates for coffee countries	 www.globalforestwatch.org
Which countries or landscapes have the highest potential risk of deforestation from coffee?	Tree cover loss x coffee production areas Deforestation hotspot x coffee production areas	 www.sustainabilityconsortium.org (coffee report)  www.trase.earth (Colombia beta site coming)
In which landscapes is coffee a major driver of deforestation?	Percentage of deforestation due to coffee	 Contact scc@conservation.org for more information
Which landscapes have the greatest opportunity for enhanced production without deforestation?	Deforestation hotspot x coffee production areas Average productivity per hectare	Global Forest Watch or other mapping tools + Subnational productivity data from suppliers and/or government datasets
Which farms are associated with deforestation?	Farms failing to comply with zero deforestation indicators	Certification and verification datasets



www.sustaincoffee.org



Climate Change Suitability Analysis

TARGET USERS

Governments and companies seeking to understand the climate change implications and suitability for coffee.

QUESTIONS THE TOOL CAN ANSWER

- What areas are currently suitable for coffee cultivation?
- What areas may be suitable for coffee cultivation in 2050?
- Forthcoming: Which coffee areas require transformation, systemic adaptation or incremental adaptation?

DATA UPDATES

When improved climate data emerges.

SPATIAL COVERAGE

Global, regional to national.

LEARNING CURVE

There is a multi-week training required.

VALIDATION PROCESS

Data has undergone local expert validation and peer-review.

ABILITY TO ADD DATA

Update only sensible if major data improvements can be expected.

AVAILABILITY

CIAT shares existing work freely.

ASSUMPTIONS

Users have knowledge of its supply base (where coffee is being grown) to understand the actual risk.

LIMITATIONS

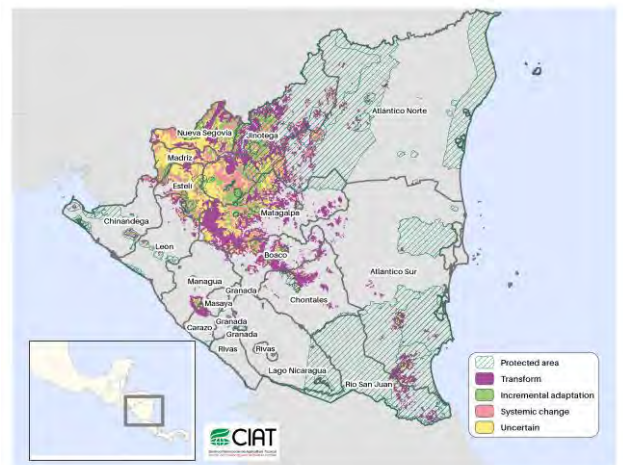
Analyses were completed at global or national levels and need validation on the ground. Focuses on climate potential and does not necessarily represent where coffee is actually being grown.

MODELING SYSTEM

The tool uses artificial intelligence to learn the relationship between current climate variables and coffee production. The trained algorithm can then be used to evaluate future climate scenarios.

WHERE TO FIND OUT MORE

<http://ciat.cgiar.org/>



Coffee in the 21st Century

TARGET USERS

Investors, government agencies and companies interested in the future of coffee production.

QUESTIONS THE TOOL CAN ANSWER

- Where does coffee suitability overlap with forest cover today and potentially pose a deforestation threat?
- Which forest areas are under threat of becoming suitable for coffee in the future?
- Which forest areas are under less threat due to declining coffee suitability?

HOW IT WORKS

Published in 2016, this report presents an analysis of future coffee supply and demand models as well as climate suitability changes and forest risk for coffee production.

SPATIAL COVERAGE

Pantropical: Latin America, Asia, Africa, Oceania.

SUSTAINABILITY OF THE TOOL

Currently, there are no plans to update the study.

AVAILABILITY

The report is freely available.

ASSUMPTIONS

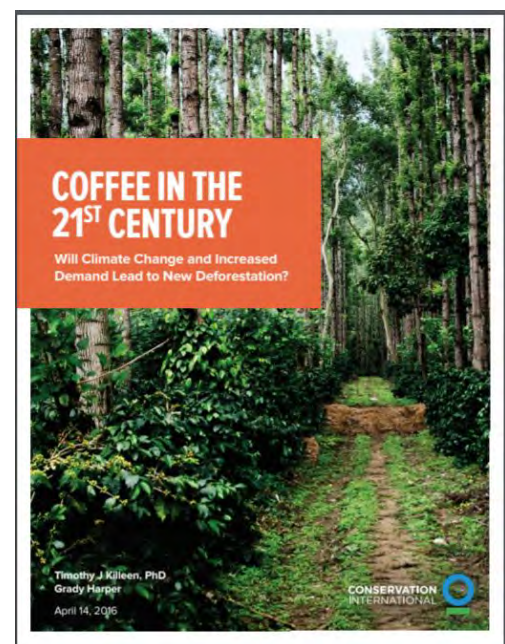
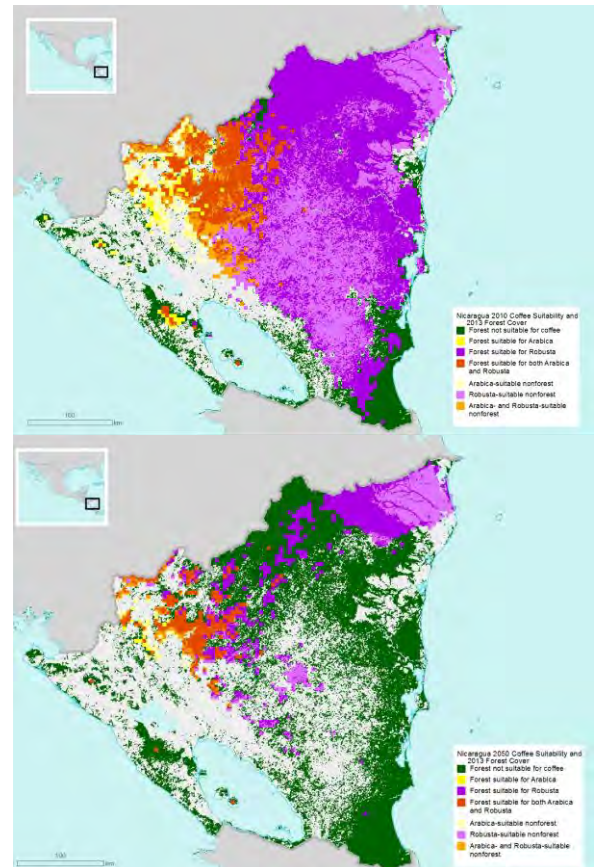
User has knowledge of its supply base (where coffee is being grown) to understand the actual risk.

LIMITATIONS

Static report, no interactive map capability. Analyses completed at country level and need to be validated. Difficult to distinguish between forest and shade coffee.

WHERE TO FIND OUT MORE

<https://www.conservation.org/publications/Documents/CI-Coffee-Report.pdf>



Commodity Mapping Tool

TARGET USERS

Retailers and roasters wanting to understand where the supply chain is most at risk from deforestation and other issues.

QUESTIONS THE TOOL CAN ANSWER

- If I am sourcing coffee from this country, where would it be most likely to come from?
- What is the risk exposure of my supply chain to deforestation (and other issues)?

HOW IT WORKS

The tool identifies growing regions that may grow arabica and/or robusta coffee, and overlays these with deforestation data from Global Forest Watch to identify hotspot areas where coffee could be a driver of forest loss.

ASSUMPTIONS

The user has knowledge of its supply base (at a country level) for the TSC tool to calculate the risk.

LIMITATIONS

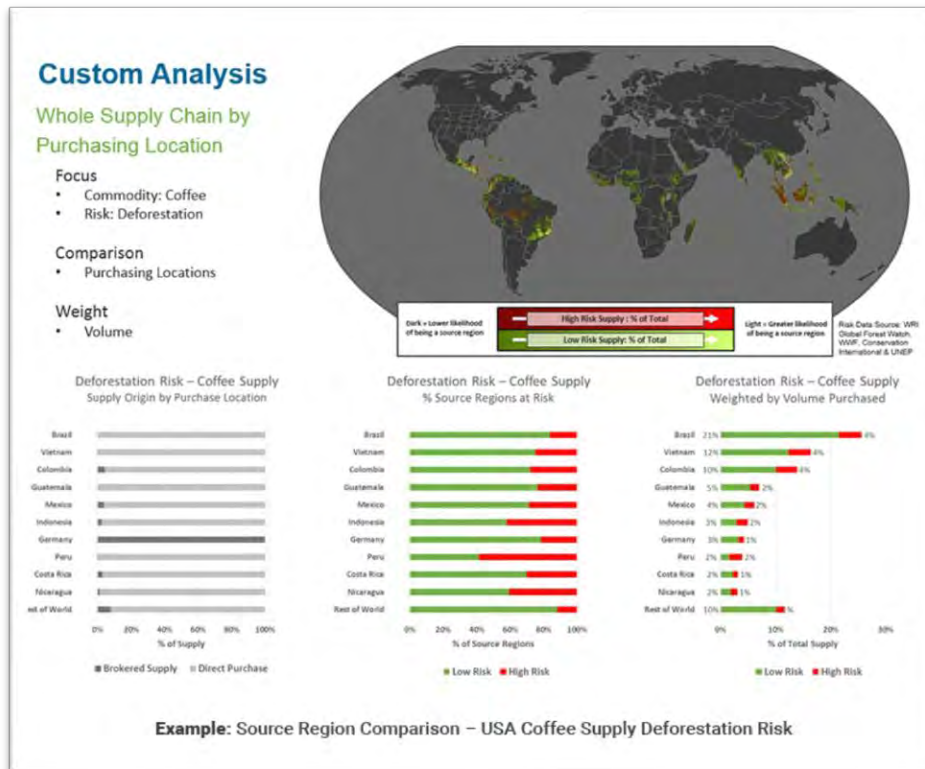
Coffee area is based on modeling and would need to be validated on the ground. Deforestation may or may not be driven by coffee.

HOW HAS IT BEEN USED

Coffee Production and Sustainability Commodity Mapping Report used TSC Commodity Mapping to identify where coffee is produced, risks in producing regions, and how companies can address these risks

WHERE TO FIND OUT MORE

<http://www.sustainabilityconsortium.org/projects/commodity-mapping/>



TARGET USERS

All stakeholders including retailers, associations, and governments that wish to monitor forest cover change and trends.

QUESTIONS THE TOOL CAN ANSWER

- Where is the forest area in the country, state, or department?
- Where has forest cover change occurred historically?
- Where has gain in tree cover occurred?
- Where are the current hotspots of forest change?
- Where are the important sites for conservation (e.g. protected areas, Alliance for Zero Extinction Sites, biodiversity hotspots)?
- How does deforestation impact these important sites?

HOW IT WORKS

The tool provides an interactive map based on over 100 global and local data sets of trends on tree cover change, land cover, land use (including various concessions and infrastructure), intact forest landscapes, biomass, mangrove forests, and conservation areas. The tool can also potentially inform on post deforestation land use class depending on the land cover data. Users can upload their own area of interest or can delineate an area of interest directly on the map.

DATA UPDATES

Some of the products are static but others are updated annually, such as land cover, and some are updated weekly, such as tree cover loss in near-real time.

SPATIAL COVERAGE

While the tool is global in scope, some data products are regional, and some are only available for specific countries.

LEARNING CURVE

While there is not a learning curve associated with the tool, some data layers require careful interpretation.

VALIDATION PROCESS

Most of the input data has been thoroughly validated and published in peer-reviewed journals.

ABILITY TO ADD DATA

Community users can elect to contribute their data to Global Forest Watch (GFW).

AVAILABILITY

The tool is freely available. If a user chooses to upload data, they agree to the GFW Terms of Service. Users can also choose to create an account to generate subscriptions and receive alerts on forest change.

ASSUMPTIONS

User has some knowledge of sourcing area or coffee area to make the data useful and applicable.

LIMITATIONS

Forest change trends constitute all sources of land use including agroforestry, palm oil production, and mining (not just coffee production).

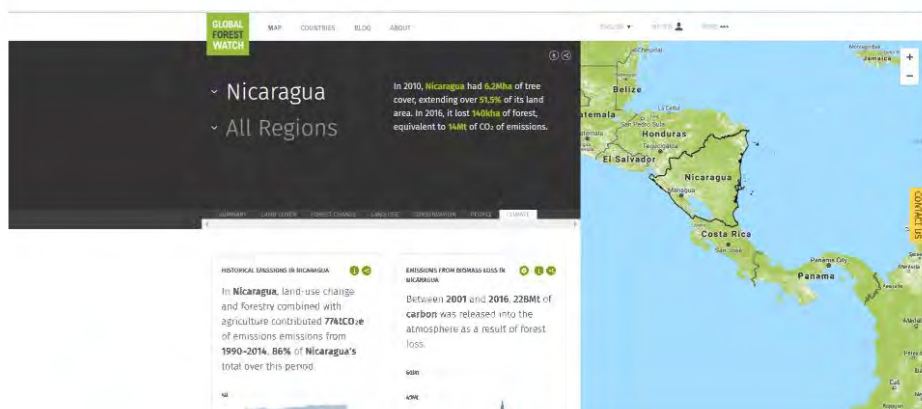
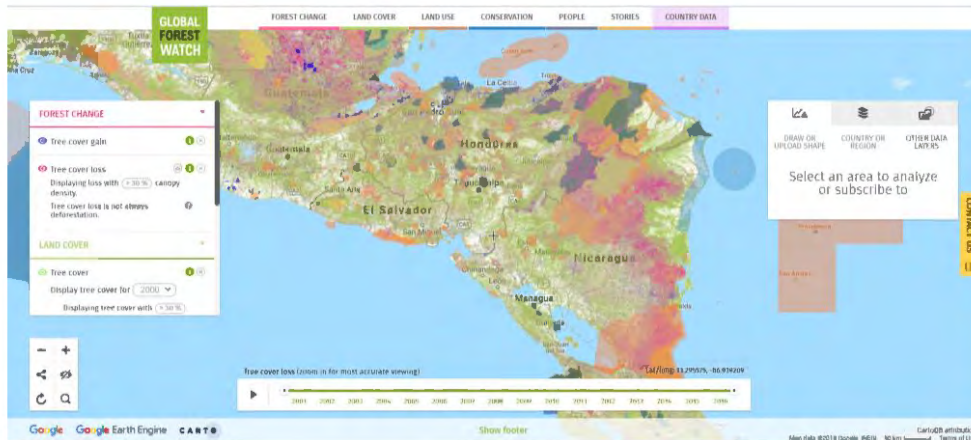
HOW HAS IT BEEN USED

Conservation organizations, policymakers, and companies use GFW tools to receive forest alerts and monitor and manage forest change in relevant regions.

WHERE TO FIND OUT MORE

<http://www.globalforestwatch.org/>

The underlying data identifying tree cover includes all vegetation taller than 5 meters in height. This has important implications for how the data are interpreted by users. For example, tree cover loss is not always deforestation and tree cover would include plantations and secondary growth.



Landscape Assessment Framework



TARGET USERS

Companies (roasters and traders), government agencies, investors and donors

CREATED BY

Coalition for Coffee Communities (with Conservation International and COSA) to assess the progress of socio-economic and ecological development within the coffee industry

QUESTIONS THE TOOL CAN ANSWER

- What is the annual rate of deforestation and how is this changing over time?
- How much of the area that was deforested is now under coffee cultivation (compared to other crops)?
- How much land is currently suitable for coffee cultivation? How much will be suitable in 2050?
- How do supply chains of multiple roasters overlap in a landscape?
- To what extent could coffee cultivation be driving forest loss in the landscape?

HOW IT WORKS

The tool assists in assessing the overall sustainability of a landscape by providing relevant indicators, based on available datasets and remote sensing, to help users in informing sustainability commitments or sustainable development goals. This assessment includes a detailed analysis of the drivers of deforestation by looking at the pre- and post-deforestation land use of sampled points to determine the percentage of deforestation driven by coffee in comparison to other types of land use.

DATA UPDATES

The CCC does not have immediate plans to update the analysis.

SPATIAL COVERAGE

The tool is very flexible and could be applied in any geography. The limitation would be tagged to data availability.

LEARNING CURVE

Since only the landscape-level tool was applied/tested we did not have chance to fully understand the caveats and gaps (if any) in integrating it with farm and producer organization's tools. However, the experience from Jinotega, helped us to create better guidelines for the delineation of the landscape boundaries, as well as tailor the results into a strength, threats and recommendations framework

VALIDATION PROCESS

There is not a formal verification process, but the results are being validate by the users. The tool relies mostly on exiting data from credible sources (government census, peer reviewed publication and global datasets), thus some level of accuracy is provided. Some of the input data (for example, the deforestation and land use analysis) is validated by field visits or using high resolution satellite images.

ABILITY TO ADD DATA

The tool is very flexible and can (and should) incorporate more data, as new information, more accurate data is available, or stakeholders/ decision makers request additional analysis.

SUSTAINABILITY OF THE TOOL

CI developed a guidebook for the Landscape Assessment Framework and provides training upon request. CI has great interest in disseminating and incentivizing the use of the LAF internally, as part of the monitoring system for the landscape initiatives.

Landscape Assessment Framework



AVAILABILITY

The tool is freely available.

ASSUMPTIONS

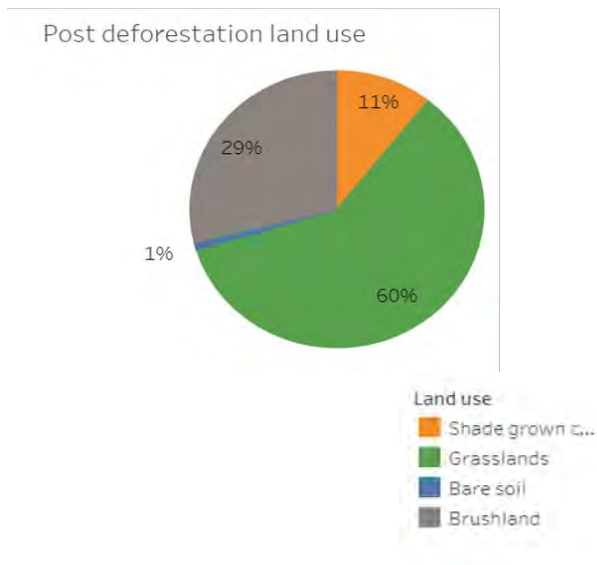
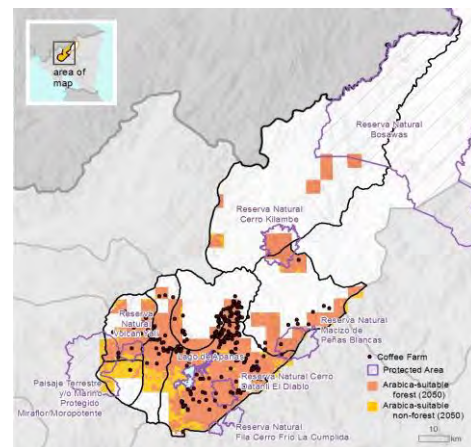
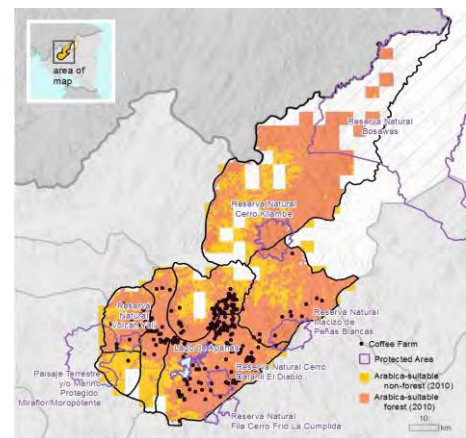
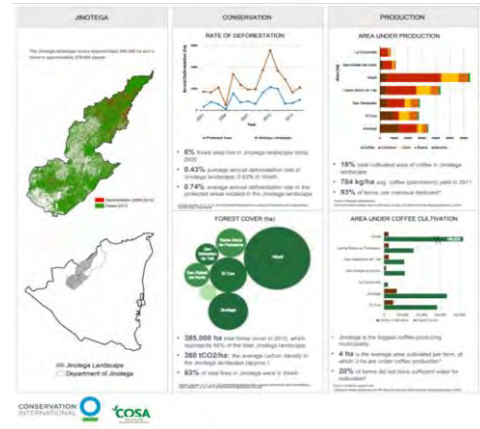
User has knowledge of its supply base (where coffee is grown) to understand the actual risk.

LIMITATIONS

Data availability (e.g. no data on extent of coffee cultivation), inability to distinguish between some shade systems and forest cover, does not provide guidance to extension analysts or farmers on climate change related actions.

WHERE TO FIND OUT MORE

<http://www.safeplatform.org/coffee-landscape-assessment/>





TARGET USERS

Companies and governments committed to more sustainable production.

QUESTIONS THE TOOL CAN ANSWER

- Which regions of production are linked to which countries of import?
- What are the sustainability risks and investment opportunities associated with a region of production?
- Which companies export, ship, or import a given commodity (coffee)?

HOW IT WORKS

Trase uses Spatially Explicit Information on Production to Consumption Systems (SEI-PCS) and national-level export data to map and provide transparency for commodity supply chains.

DATA UPDATES

Data is updated yearly. Currently there is not a set schedule for addition of data but there will be an update plan soon.

SPATIAL COVERAGE

Brazil, Argentina, Paraguay, Indonesia, Colombia.

LEARNING CURVE

The tool allows data hosted in the platform to be visualized in a use friendly manner. Data can also be downloaded and applied to any other program or used on other analysis. The tool is used to visualize the information, and the visualizations/platform can be understood after a ~15-30-minute presentation.

VALIDATION PROCESS

The Trase Initiative uses official government bills of landing and export data. Errors within the connections in the supply chains or from the government data are corrected. Each commodity has various checks prior to the information being released on the site.

ABILITY TO ADD DATA

The initiative is about transparency, and the data can be used with any other data

SUSTAINABILITY OF THE TOOL

The Trase initiative has long term support to maintain the platform.

AVAILABILITY

The Trase data is free and downloadable by all.

ASSUMPTIONS

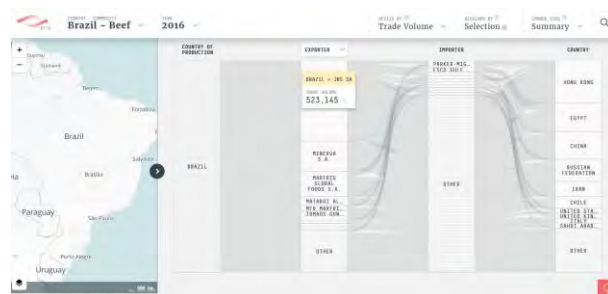
Users should have knowledge of their supply base to analyze their specific risks to the supply chain.

LIMITATIONS

Currently focuses on soy, cattle, and palm oil but there are plans (in next 5 years) to expand to coffee; does not yet analyze down to the individual level of farms and retailers. Coffee analysis limited to Colombia.

WHERE TO FIND OUT MORE

<https://trase.earth/>



Visualization Tool



TARGET USERS

Public actors, NGOs but also private sector companies with deforestation commitments.

QUESTIONS THE TOOL CAN ANSWER

Detects land-cover changes resulting from human activities in near real-time. This tool allows the user to visualize and obtain statistical data on decrease detections from 2004 until the most recent data at different levels or target areas such as country, second and third administrative level, protected and indigenous areas or ecosystems.

DATA UPDATES

Data is updated every 16 days.

SPATIAL COVERAGE

Pantropical: Latin America, Asia, Africa, Oceania

LEARNING CURVE

The learning curve is low because it has a simple design for searching and visualization information. Line and bar graphs are presented, and the data can be downloaded in csv and ascii format. Additionally, there are manuals for the use of the website and the data.

VALIDATION PROCESS

The data distributed here is in RASTER ARC ASCII format at 250m spatial resolution, in decimal degrees and datum WGS84. It is derived from the USGS/NASA MODIS data. CIAT processed this data to provide habitat change maps. The detections were made using algorithms described by Reymondin et al. (2012). The data represents yearly cumulative detections of land cover change since 2004. The value 0 means that the pixel remained unchanged, whilst the other values represent on which 16 days period a given pixel has been

detected as converted. For example, if in the grid for 2004 you find a pixel with the value 1, it means it has been detected as converted the 2004.01.01 and with the value 2 it has been detected on the 2004.01.17.

ABILITY TO ADD DATA

The web tool can incorporate additional layers for visualization in kml format. The Terra-i team can also include new ascii layers, but these require a preprocessing.

SUSTAINABILITY OF THE TOOL

There are currently funds from the CGIAR Research Program on Forests, Trees and Agroforestry (FTA) and from other projects in Colombia and Honduras.

AVAILABILITY

The tool is freely available.

ASSUMPTIONS

Ability to procure new projects in Latin America, Asia and Africa for expanding the analysis in the land cover change and relationship with other ecosystem services.

LIMITATIONS

Terra-i only provides data about vegetation change (gain or loss). Secondary data (i.e. spatial distribution of natural coverage, forest plantations, crop areas, among others) must be used to get more proximate results about which sort of vegetation changed or which land-use activity could be associated with the change.

MODELING SYSTEM

The system is based on the premise that natural vegetation follows a predictable pattern of changes in greenness from one date to the next brought about by site-specific land and

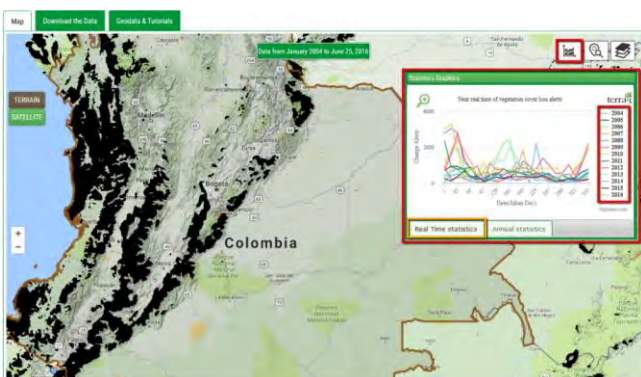
Visualization Tool



climatic conditions over the same period. A so-called computational neural network is 'trained' to understand the normal pattern of changes in vegetation greenness in relation to terrain and rainfall for a site and then marks areas as changed where the greenness suddenly changes well beyond these normal limits. Running on many computers this analysis is refreshed with new imagery every 16 days and for every 250m square of land.

FIND OUT MORE

<http://terra-i.org>



COFFEE + DEFORESTATION IN TROPICAL LANDSCAPES

What we know and what we need to know

The Global Context

Coffee is grown on roughly 10 million hectares of land across nearly 80 countries spread throughout the tropics. Although it's currently grown on only 2% of the land suitable for growing coffee, tropical forests cover 60% of the suitable land and only 20% of this is under any sort of protection¹. This figure is expected to remain the same even as coffee producing geographies shift in elevation and latitude and the total area suitable for coffee is cut in half.

Arabica coffee faces the greatest risk. Grown at the highest altitudes and on an estimated 7 million hectares of land, one study estimated that the total suitable area will be reduced by 44% between now and 2050 due to climate change.² The greatest threat of deforestation from expanded or shifted Arabica production is most likely in the Andes and Central America where most of the upslope areas are still covered by tropical forests.³ East Africa also faces some threat due to expanding population and the need for land to meet food production needs, which could lead to further forest loss.⁴

Identifying Hotspots at the Country and Landscape Levels

The Global Forest Watch (GFW) tool provides a regularly-updated, on-line platform to monitor forest loss at a country and sub-national level. Yet it does not include the ability to overlay coffee production areas with this information.

The Sustainability Consortium's (TSC) Commodity Risk Assessment Tool uses the GFW data and overlays it with coffee production data to identify hotspot countries for potential deforestation from coffee. The TSC tool has identified 9 countries as hotspots for potential deforestation from Arabica coffee production based on the overlap of tree cover loss and coffee producing areas. Countries with the highest degree of overlap are: Peru, Colombia, Honduras, Guatemala, Nicaragua and Mexico. Brazil, China and Ethiopia were also noted as origins having some risk⁵.

For each of these countries, deeper analysis is needed to identify key landscapes of particular interest, to determine the extent to which coffee is driving this forest loss and to identify appropriate interventions to effectively address the issue. TSC has shared a list of landscapes where there is a potential risk of deforestation based on the degree of overlap between areas that have experienced some loss of tree cover that also produce coffee. Out of a total 10,273 locations pulled into the data file, 3490 were identified as having a deforestation risk factor of 1% or more. These 3490 locations are spread across 68 countries. A total of 531 locations spanning 31 countries had an average risk factor of 75% or higher (see summary table below).

The Sustainable Coffee Challenge Collective Action Network on Mapping and Monitoring of Forests and Coffee is exploring the GFW and TSC datasets to identify priority countries and landscapes for these

¹ Killeen + Harper, 2016.

² Ibid.

³ Ibid.

⁴ Ibid.

⁵ The Sustainability Consortium, 2017.

deeper analyses. The Network is also looking at opportunities to update and improve the coffee production maps and integrate climate change suitability models into how we identify potential future risk of deforestation from coffee.

Country	No. of locations with potential risk of >74%	Potential Risk defor x coffee overlap avg %	Tons of coffee production
Brazil	132	90%	180191.2
Indonesia	34	91%	68765.7
Colombia	39	93%	54877.0
Honduras	24	96%	38325.6
Guatemala	29	95%	30406.8
Peru	3	89%	29244.2
Nicaragua	11	89%	27391.2
Malaysia	46	91%	25163.8
Philippines	18	97%	15482.6
Mexico	43	95%	11900.7
Thailand	58	93%	11146.9
Costa Rica	3	100%	4959.9
Cote d'Ivoire	1	81%	2890.0
Laos	5	91%	2557.1
Uganda	2	95%	2188.5
Paraguay	18	85%	1567.3
Dominican Republic	12	99%	1296.4
Ecuador	4	81%	989.1
Ghana	2	83%	822.9
El Salvador	3	100%	276.8
Cameroon	1	100%	122.4
Venezuela	5	100%	104.7
Cambodia	15	89%	59.6
Liberia	8	93%	53.9
Bolivia	1	88%	6.9
Malawi	3	100%	6.2
Suriname	2	100%	1.8
Nigeria	7	94%	1.6
Mozambique	1	75%	1.0
South Africa	1	75%	0.1
Grand Total	531	92%	510801.8

Understanding the Role of Coffee – Experience from Peru, Nicaragua, Honduras and Indonesia

Conservation International has developed an innovative approach for determine and quantify the extent to which coffee and other production systems are driving deforestation in target landscapes using fine-scale remote sensing based on a sampling methodology to look at pre and post deforestation land use change. We have undertaken these analyses in 4 coffee producing regions to quantify the extent to which coffee is driving deforestation. A summary of findings is provided below.

San Martin, Peru

In San Martin, Peru coffee was identified as the primary driver of forest loss around the Alto Mayo Protected Area. Coffee was responsible for 39% of the deforestation in the landscape, where migrants to the area had adopted a short-term, slash and burn model of coffee production. Conservation International was able to develop interventions that stabilized coffee productivity over the longer term and engaged

farmers in agreements to halt deforestation. For more information on the deforestation, social and production indices used, please see the following site:

https://www.conservation.org/publications/Documents/Carbon_LAF_Alto%20Mayo%20Watershed%20Scorecard.pdf

Jinotega, Nicaragua

In Jinotega, Nicaragua the Coalition for Coffee Communities partners teamed up with Conservation International and COSA to undertake a landscape assessment that also identified the role of coffee in forest cover change. Based on this analysis, we found that coffee farms are located in areas that still have large areas of intact forest and that deforestation and forest degradation are happening at a low but consistent rate in the landscape. There is more work to do to determine the specific role of coffee in driving deforestation, but climate model show that suitability for coffee production could be reduced by 50-60% by 2050, which could drive land clearing to maintain productivity of high quality arabica coffees.⁶

Ocotepeque, Honduras

As part of the Alliance for Resilient Coffee, Conservation International has undertaken an assessment of the Ocotepeque landscape in Honduras to determine the extent to which coffee is driving deforestation. In this case we found that coffee is the primary driver of deforestation in the landscape, responsible for 56% of forest loss. The analysis found that declining productivity of old coffee trees was a root cause of the expansion of coffee into forested areas as it was more cost-effective to clear and plant new areas than to renovate existing farms. For more information visit:

<https://www.conservation.org/publications/Documents/Honduras%20Scorecard.pdf>

Mandailing Natal, North Sumatra, Indonesia

In North Sumatra, Conservation International with support of USAID and the Walton Family Foundation undertook an assessment of the Mandailing Natal regency to identify production, environmental and social factors of critical concern in the region. While the deforestation analysis found that 78% of deforestation in that landscape was due to palm oil expansion, it also found a small percentage due to mixed agroforestry systems that produce coffee. Further analyses of Arabica coffee in Mandailing Natal and 2 neighboring regencies (Tapanuli Selatan and Tapanuli Utara) found that by 2050 only 14% of the area suitable for Arabica production will remain.⁷ This study also found that areas of high suitability for Arabica coffee production presented risk to those areas identified as having High Conservation Value in the region, both currently and in the future.

Developing a Holistic Approach to Identifying and Addressing Coffee-Related Deforestation

Currently each of the above-mentioned tools and approaches sit independently of one another. There is no single resource to help companies, governments and other stakeholders understand the relationship between coffee production and deforestation. We believe there is a tremendous opportunity to develop a tool that combines these datasets and becomes an interactive one-stop-shop for understanding the relationship between coffee and deforestation.

To start, however, we need to develop a joint approach for assessing and monitoring how the relationship between coffee and forest cover is changing over time. As such we have developed the following 5-step

⁶ CCC Executive Summary, 2017

⁷ SNV, 2015.

approach for moving from country to landscape level analyses and quantifying not only the change in coffee-related forest cover but also monitoring carbon emissions from coffee-related deforestation.

The goal is to pinpoint landscapes presenting the greatest risks and opportunities and to address risks of deforestation from coffee head-on. We propose the following approach to identifying and monitoring landscapes of greatest risk of deforestation from coffee to enable targeted investments to conserve these critical areas while continuing to produce coffee and sustaining the livelihoods of producer communities.

1. Conduct global analysis to determine priority countries for deeper analyses using existing data. Identify any data gaps and opportunities for improving existing datasets.
2. Assess and quantify the role of coffee in driving forest cover change (positive and negative) for the priority landscapes using the landscape assessment methodology (agree on forest classifications, collect, compile and analyze data)
3. Validate models and assumptions using farm level data from certifications (e.g. Fair Trade, Rainforest Alliance, etc.) and based on expert consultation with focal groups.
4. Calculate carbon emissions based on forest loss variables
5. Develop and apply monitoring protocol for updating datasets and detecting change in baseline over time

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[production-sustainability-sustainability-consortiums-commodity-mapping-report/?wpdmdl=21105&ind=T87uOMC83RgAM4XjgkqDEMCNdCd1fP7gf2b6Ls7POFzHuEJWFACx2I6VZa_mAv0JZUtUfdo30JnHrMmEzYZcCVI2I9GOo5Oz53WXs9IP0Yd2Lj5-8dS3Krn7TcnIWrHwrYsswEqs01e96IogsKhQ](https://www.sustainabilityconsortium.org/downloads/coffee-production-sustainability-sustainability-consortiums-commodity-mapping-report/?wpdmdl=21105&ind=T87uOMC83RgAM4XjgkqDEMCNdCd1fP7gf2b6Ls7POFzHuEJWFACx2I6VZa_mAv0JZUtUfdo30JnHrMmEzYZcCVI2I9GOo5Oz53WXs9IP0Yd2Lj5-8dS3Krn7TcnIWrHwrYsswEqs01e96IogsKhQ)



IMPROVING LABOR PRACTICES + SUPPLY

A coffee sector in which forced labor and child labor are eradicated and working conditions enable all workers involved in coffee production to prosper.

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IMPROVING LABOR PRACTICES + SUPPLY NETWORK MEMBERS

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Arizona State University* 2. Boncafe International* 3. Cafedirect Producers' Foundation 4. Caffe Ibis Coffee Roasting Co.* 5. Catholic Relief Services 6. Conservation International* 7. Counter Culture Coffee* 8. Fair Trade America* 9. Fairtrade International 10. Fairtrade USA* 11. Farmer Brothers* 12. Gaviña 13. Hanns R Neumann Stiftung (HRNS)* 14. Keurig Green Mountain* 15. Lutheran World Relief | <ol style="list-style-type: none"> 16. nuJava Coffee Company* 17. Rainforest Alliance* 18. RGC Coffee 19. SCAN* 20. SCS Global Services 21. Solidaridad* 22. Specialty Coffee Association* 23. Starbucks* 24. TechnoServe* 25. True Roots 26. Tuungane Women's Coffee Cooperative* 27. United Farm Workers 28. UTZ* 29. Verite 30. Vigilante Coffee* |
|--|---|

*Denotes Sustainable Coffee Challenge partner





POCKET GUIDE

IMPROVING LABOR PRACTICES + SUPPLY



**SUSTAINABLE
COFFEE
CHALLENGE**

IMPROVING LABOR PRACTICES + SUPPLY

Introduction

Coffee depends on workers to maintain coffee fields, pick the ripe cherries, process them into green coffee and roast and package them.

Within the coffee production system we have a number of worker types: Full-Time, Part-Time, Temporary, Multi-Party, and Ambiguous or Disguised Employment. Each of these is further defined below.

Coffee also has a number of different labor supply systems. These can vary from informal family labor and farmer or community labor exchange systems to more formal employment of full-time, part time, and temporary workers. These workers might be employed directly or via labor brokers. The majority of labor is hired for the harvest period when the coffee is picked from the trees.

Good labor practices should be the norm for each of these categories of workers and throughout the coffee supply chain, but we continue to confront forced labor, human trafficking and child labor in coffee.

Do we really understand what these terms mean? We need to in order to begin discussions and to better detect these issues in coffee production.

This short guidance document provides an overview of these terms and other key labor terms for the coffee sector and guides users through a process of considering and addressing risks.



PEOPLE NEED COFFEE TO THRIVE, AND COFFEE NEEDS PEOPLE AND NATURE TO THRIVE

TYPES OF LABOR



TEMPORARY EMPLOYMENT

Workers are engaged for a specific period of time, includes fixed-term, project or task-based contracts, as well as seasonal or casual work.



MULTI-PARTY EMPLOYMENT

Workers are not directly employed by the company to which they provide their services.



PART-TIME + ON-CALL WORK

An employed person whose normal hours of work are fewer than those of comparable full-time workers (fewer than 35 hours, or 30 hours, per week).



DISGUISED EMPLOYMENT/ DEPENDENT SELF-EMPLOYMENT

Employment instance where respective rights and obligations of the parties concerned are not clear, or when inadequacies or gaps exist in the legislation.

CHILD LABOR IN COFFEE

Introduction

Reports and photos of children carrying heavy sacks of coffee during the harvest season persist in the sector. No government or company wants to find these conditions. To prevent these, we need to first understand what constitutes 'child labor'. And to understand under what conditions it is acceptable to have children working on coffee farms.

The International Labor Organization (ILO) is the global authority on labor conditions. It establishes global norms via a number of conventions that governments ratify and coffee certification and verification standards reference. In addition to the ILO conventions, governments often have additional protections that take the form of prohibited tasks that may be specific to sectors.

This section provides an overview of some of the common terms used to describe child work and child labor and the conditions to look for when discussing labor practices within coffee production.

What is Child Labor?

According to the International Labor Organization (ILO), child labor is any work that "deprives children of their childhood, their potential and their dignity, and that is harmful to their physical and mental development." One of the key concerns with regard to child labor is that it can interfere with their ability to attend and perform well at school. More specifically it states that work should not interfere with children's schooling by:

- depriving them of the opportunity to attend school;

- obliging them to leave school prematurely; or
- requiring them to attempt to combine school attendance with excessively long and heavy work.

The ILO conventions also protect children from work that is "mentally, physically, socially or morally dangerous and harmful"

The ILO convention says that the minimum age for work should not be below the age for finishing compulsory schooling, and in most cases the worker should not be younger than 15 years of age. For developing countries, which include most coffee producing countries, the minimum age can be as low as 14 years of age.

The conventions do allow for children between the ages of 12 and 14 in developing countries to do "light work" as long as it does not threaten their health and safety, or hinder their education or vocational orientation and training.

In coffee, many programs refer to the 'worst forms of child labor'. When this phrase is used it refers to the following conditions as defined by Article 3 of ILO Convention No. 182:

- (a) all forms of slavery or practices similar to slavery, such as the sale and trafficking of children, debt bondage and serfdom and forced or compulsory labor, including forced or compulsory recruitment of children for use in armed conflict;
- (b) the use, procuring or offering of a child for prostitution, for the production of pornography or for pornographic performances;

(c) the use, procuring or offering of a child for illicit activities, in particular for the production and trafficking of drugs as defined in the relevant international treaties;

(d) work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children (Hazardous Child Labor).

Hazardous child labor is any work that is likely to jeopardize children's physical, mental or moral health, safety or morals should not be done by anyone under the age of 18. This usually entails prohibitions on the application of pesticides, use of sharp tools and lifting heavy loads.

Sources: https://www.fairtrade.net/fileadmin/user_upload/content/2009/programmes/2015-fairtrade-child-forced-labor-guidelines.pdf

<http://www.ilo.org/ipec/facts/lang--en/index.htm>



FORCED LABOR IN COFFEE

Introduction

Forced labor often conjures images of slavery and human trafficking. Yet it can also include other means that employers use to force people into work. It can appear in various forms that range from human trafficking to retaining personal documentation or implementing practices that cause workers to become indebted to corporate-owned stores. Each of these restricts the ability of the workers to move freely and/or to discontinue their employment.

Unfortunately there continue to be reports of forced labor in coffee. This is unacceptable and presents tremendous risks to stakeholders throughout the coffee value chain.

This brief provides an overview of global definitions of forced labor based on ILO conventions to help raise awareness of the issue and how to better detect and address it by pointing out some practices that are known to present risks.

What is Forced Labor?

In its most legal form, forced, or compulsory labor refers to “all work or service which is exacted from any person under the threat of a penalty and for which the person has not offered himself or herself voluntarily”.

This definition is concerned about forced labor in all types of employment, both formal and informal and the penalties employers use to compel the person to work.

Forced labor is in direct contrast to work that is offered voluntarily in which the

worker has given his or her free and informed consent to accept a job and has the ability to end the employment at any time.

How is Forced Labor Detected in Coffee?

Forced labor is very difficult to detect, but there are certain practices in coffee that are known to be good indicators of its potential. When these indicators are detected, efforts should be made to investigate them by engaging directly with suppliers.

Specific indicators that can serve as red flags for forced labor include the following:

Labor brokers + recruitment fees:

Some farms use labor brokers to source temporary workers during the harvest season. Some labor brokers may charge workers recruitment fees that result in high indebtedness and bondage. The use of labor brokers also results in less transparency of labor practices on the farm.

Document Retention: Farm managers may hold identification papers (e.g. government issued ID) on behalf of the workers and refuse to give them back to the workers upon request.

Indebtedness to the farm or to a company store: Workers may be forced to purchase goods at a company store that extends credit, which can result in indebtedness that renders their work involuntary.

Source: <http://www.ilo.org/global/topics/forced-labour/lang-en/index.htm>



NATIONAL ACTION PLANS ON FORCED AND CHILD LABOR

Some coffee producing countries have developed and are implementing national action plans to address forced and child labor concerns. It is important to understand where these exist as there may be opportunities to leverage them and form partnerships with the government to enhance their enforcement in the coffee sector.

While these policies are important they do not signify that there are no forced or child labor risks in coffee production within that country. It is important to understand

the effectiveness of these policies and their level of implementation. If they are not effectively implemented, there may be opportunities to work with local stakeholders to strengthen existing programs.

The following table categorizes coffee producing countries according to whether they have national action plans in place for forced and/or child labor. In many cases the policies and strategies in place to address the issues are not referred to as 'National Action Plans' which makes it difficult to clearly demarcate which category

a country fits within. This table takes an inclusive approach and counts policies and strategies as action plans as long as they made reference to forced labor/ human trafficking and/or child labor. These plans are not specific to coffee, but we believe this information can help start the dialogue with local actors to ask questions, learn more and find opportunities to work together to eradicate these practices from the coffee sector.

Countries with NAP for Child and Forced Labor		Countries with NAP for Child Labor Only		Countries with NAP for Forced Labor Only	Countries without National Action Plans
Brazil	Madagascar	Angola	Kenya	Bolivia	Central African Republic
Burundi	Nepal	Belize	Malawi	Fiji	Dominica
China	Nigeria	Benin	Mozambique	Guinea	Equatorial Guinea
Colombia	Panama	Cambodia	Nicaragua	Guyana	Laos
Comoros	Papua New Guinea	Cameroon	Thailand	Haiti	Mayanmar
Costa Rica	Paraguay	Congo	Timor-Leste	Jamaica	Samoa
Côte d'Ivoire	Peru	Democratic Republic of the Congo	Togo	Malaysia	Sao Tome and Principe
Cuba	Philippines	Dominican Republic	Trinidad and Tobago	Mexico	Suriname
Ecuador	Rwanda	El Salvador	United Republic of Tanzania	Saint Vincent and the Grenadines	Tonga
Ethiopia	Uganda	Gabon		Sierra Leone	Venezuela
Honduras	Vanuatu	Ghana		Sri Lanka	Yemen
Indonesia	Vietnam	Guatemala			Zambia
Liberia	Zimbabwe	India			

IDENTIFYING + ADDRESSING POTENTIAL LABOR SUPPLY CHAIN RISKS

- 1. Identify Risk:** Which origins present the greatest risk of labor issues?
- 2. Dive Deeper in Risky Origins:** Are there critical issues in my supply chain?
- 3. Identify and Undertake Corrective Action:** Are the suppliers willing to undertake corrective actions?
- 4. Assess opportunities to address issue at scale:** How pervasive is the issue in the region? Are my peers willing to collaborate to address the issue at scale? Is there a national action plan that I can support?



LABOR: MAKING SENSE OF THE EXISTING WORK

	Name	Purpose	Scale/ Geography
Tools	Improving supply chain transparency, monitoring and accountability in Guatemala's coffee sector	Grievance Mechanism	Guatemala
	Responsible sourcing tool	Risk Assessment	Global
	Fair hiring toolkit	Best Practice Guide	Global
	Forced labor priority principles	Principles	Global
	Commodity mapping tool	Risk Assessment	Global

	Name	Purpose	Scale/ Geography
Reports/ Studies	Farmworker Protections and Labor Conditions in Brazil's Coffee Sector	Country Assessment	Brazil
	Fairtrade coffee farmer income assessment	Income Benchmark	Rwanda, Tanzania, Uganda, Kenya, India, Indonesia, & Vietnam
	Understanding the situation of workers in corporate and family coffee farms	Country Assessment	Colombia, Nicaragua
	A Blueprint for farmworker inclusion	Guidance on Key Issues	Global
	Global living wage coalition	Income Benchmark	Global (?)

	Name	Purpose	Scale/ Geography
Projects	Aquadas Farmworkers Pilot	Project Intervention	Colombia
	La Revancha	Project Intervention	Nicaragua



www.sustaincoffee.org



A Blueprint for Farmworker Inclusion



DESCRIPTION

White paper presenting a set of recommendations on how to assess and address farmworker challenges in coffee along with some case studies.

CREATED BY

Specialty Coffee Association

GEOGRAPHIC FOCUS

Global

QUESTIONS THE TOOL CAN ANSWER

- What are the key labor issues in coffee?
- How does it relate to coffee?
- What can I do to begin addressing it?
- What are other industry actors doing?

ASSUMPTIONS

The audience (industry) is familiar with coffee production.

LIMITATIONS

Limited body of research on farmworkers in coffee to draw upon.

PARTNERS

SCA Members

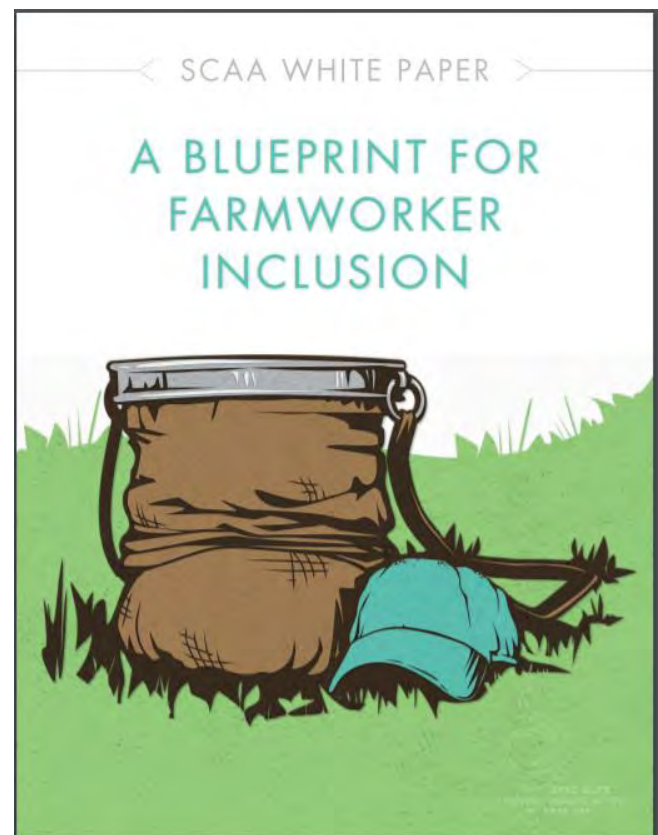
KEY LESSONS

It is critical for the coffee industry to value the labor of farmworkers. Marginalized, unrecognized workers are vulnerable to human rights abuses. Producers face increasing labor shortages that reduce (or

eliminate) their ability to turn a profit. Buyers face risks to their brands when farms are found to violate labor laws.

FIND OUT MORE

<http://www.scanews.coffee/wp-content/uploads/2016/04/SCAA-WP-TheFarmWorker-April2016.pdf>



PROJECT OBJECTIVE

- To better understand labor shortages and their impacts on coffee production and define solutions to increase the quantity and quality of farmworkers.
- Improve working conditions, provide access to information, and offer training programs for farmworkers so that small-scale coffee farmers can attract and retain qualified labor.
- More specifically it:
 - Tests mechanisms to attract workforce to coffee farms.
 - Encourages industry participation to improve working conditions on coffee farms.

MILESTONES ACHIEVED

As of February 2018, the project benefited 158 producers and 240 workers and also exercised its influence on 27 out of a total of 39 coffee villages in the municipality of Aguadas. A Technical council has been formed to oversee the project performance. The monitoring report for the first year of implementation is ready.

CREATED BY

RGC Coffee

GEOGRAPHIC FOCUS

Caldas, Colombia

START AND END DATE

Results expected in Q1 2018, the project has been upgraded to a permanent program.

ASSUMPTIONS

- Farms pay wages at market prices.
- Farms have technified crop management systems (young coffee trees, with renovation cycles).
- Farms are located in an agro-climatic zone suitable for growing coffee.

LIMITATIONS

Worker distrust is generalized, but as soon as they see that the project is fulfilling promises, they want to be enrolled. Projects involving workers generally

take longer to show results. It is a must to invest early on awareness efforts.

PARTNERS

Aguadas Cooperative, SCA, UTZ, Fair Trade USA, CRECE, Solidaridad, Luis-Jota Foundation, Expocafe.

STATUS

Results of the pilot will be shared in SCA Seattle 2018.

KEY LESSONS

- The credibility of the implementers among the community is the key to generating trust.
- The implementer's willingness to make changes and adjustments required is crucial throughout the implementation of the project.
- It is essential to incorporate an approach that is based on the measurement of results.
- An effective way to guarantee the project's sustainability is by linking it to a coffee sales strategy as part of an "inclusive business case".
- Collective work contributes to achieving results in projects with workers.
- Permanent dialogue with producers and workers as well as addressing collective solutions, allows the construction of low cost but high social impact implementation strategies.

FIND OUT MORE

<http://www.rgccoffee.com/aguadas-farmerworkers.html>



Why this Project is so Important?

To better understand labor shortage and its impact on coffee production and define solutions to increase the quantity and quality of farmworkers.

To them!

By improving working conditions, giving farmworkers better access to information and offering training programs, small-scale farm

To us!

The pilot intends to encourage broader industry participation and dialogue related to the treatment of farmworkers and strategies to

To you!

To find strategic solutions to increase the quantity and quality of farmworkers, defining a universal protocol in the industry to ensure a sustainable

Commodity Mapping Tool



OBJECTIVE

Pinpoint risks associated with commodity sourcing.

DESCRIPTION OF THE TOOL

Risk assessment tool to understand the risks associated with sourcing coffee from various countries. Risks included are: child and forced labor, deforestation, water scarcity and biodiversity.

CREATED BY

The Sustainability Consortium

GEOGRAPHIC FOCUS

Global

QUESTIONS THE TOOL CAN ANSWER

- Which countries present the greatest risk of child and/or forced labor in coffee supply chains?

FIND OUT MORE

<https://www.sustainabilityconsortium.org/projects/commodity-mapping/>



All Coffee (Arabica + Robusta)	Production Rank	Average	Biodiversity	Child Labor	Deforestation	Forced Labor	Water Scarcity
Brazil	1	Red	Red	Green	Yellow	Green	Green
Vietnam	2	Red	Red	Red	Red	Green	Yellow
Colombia	3	Red	Red	Red	Red	Green	Green
Indonesia	4	Red	Red	Green	Red	Red	Red
Ethiopia	5	Yellow	Red	Green	Yellow	Green	Green
Honduras	6	Red	Red	Red	Red	Green	Green
India	7	Red	Red	Green	Green	Red	Red
Peru	8	Red	Red	Green	Red	Red	Red
Uganda	9	Red	Yellow	Red	Yellow	Green	Green
Guatemala	10	Red	Red	Red	Red	Green	Green

Fair Hiring Tool

OBJECTIVE

Toolkit offers tools, guidance, and approaches to support the responsible recruitment and hiring of migrant workers in global supply chains; includes information for brands, suppliers, government, advocates, investors, auditors, and multi-stakeholder initiatives.

DESCRIPTION OF THE TOOL

Tools, guidance, and approaches to support the responsible recruitment and hiring of migrant workers in global supply chains.

CREATED BY

Verité

GEOGRAPHIC FOCUS

Global

QUESTIONS THE TOOL CAN ANSWER

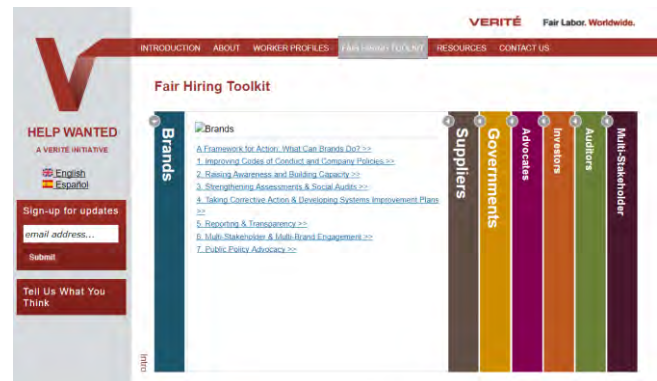
- What risks do labor brokers present for my company?
- What steps can my company and its suppliers take to reduce these risks?

PARTNERS

State Department's Office to Monitor and Combat Trafficking in Persons, Made in a Free World, Aspen Institute.

FIND OUT MORE

<http://helpwanted.verite.org/helpwanted/toolkit>



Fairtrade Coffee Farmer Income Assessment



DESCRIPTION

Coffee farmer income assessment methodology and pilot designed to:

- Develop fit-for-purpose benchmarks and refined living income methodology.
- Develop holistic Living Income Strategy – create an environment and develop tools that support Fairtrade farmers to progress towards a living income.

CREATED BY

Fairtrade International

GEOGRAPHIC FOCUS

Rwanda, Tanzania, Uganda, Kenya, India, Indonesia, & Vietnam.

QUESTIONS THE TOOL CAN ANSWER

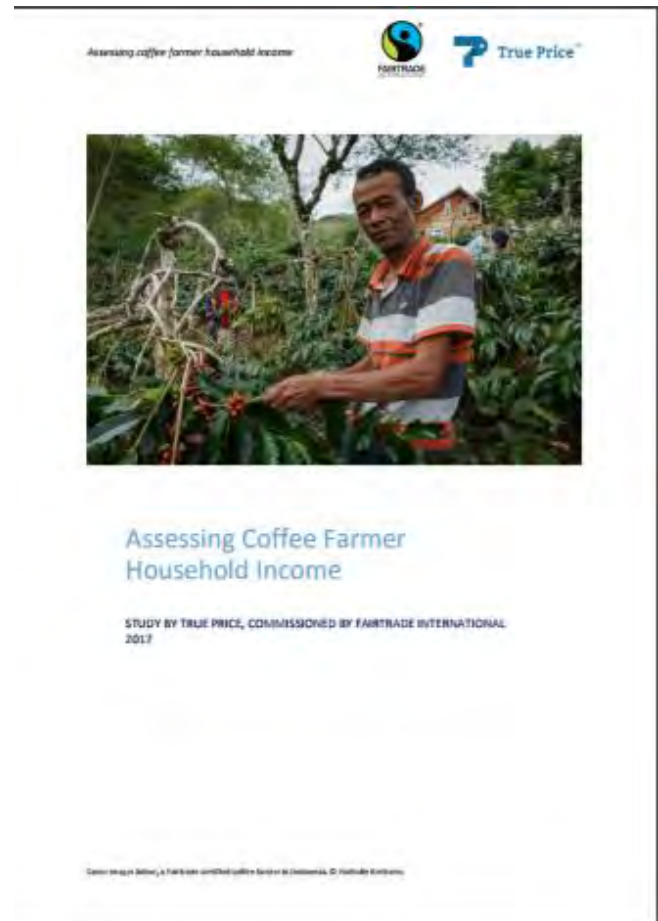
- What is the reliance on coffee farming for household income?
- How do household incomes differ between countries?
- Are coffee farmers attaining a living income?
- Are coffee farmers able to pay workers a living wage?

PARTNERS

Fairtrade International, True Price.

FIND OUT MORE

<http://trueprice.org/wp-content/uploads/2017/08/180807-Assessing-Coffee-Farmer-Household-Income.pdf>



Farmworker Protections and Labor Conditions in Brazil's Coffee Sector



DESCRIPTION

A report published in 2016 on labor conditions in the Brazilian coffee sector, that includes background on 'slave labor' (as defined by Brazilian authorities) and recommendations for promoting its eradication in the country.

CREATED BY

Catholic Relief Services

GEOGRAPHIC FOCUS

Brazil

QUESTIONS THE TOOL CAN ANSWER

- What is the historical and current context in Brazil surrounding the forced labor issue?
- How do the Brazilian authorities define 'slave labor'?
- What are the root causes/risk factors of forced labor in the country?
- Given the current context, what can be done in Brazil to move towards eradication of forced and slave labor in the coffee sector?

ASSUMPTIONS

N/A

LIMITATIONS

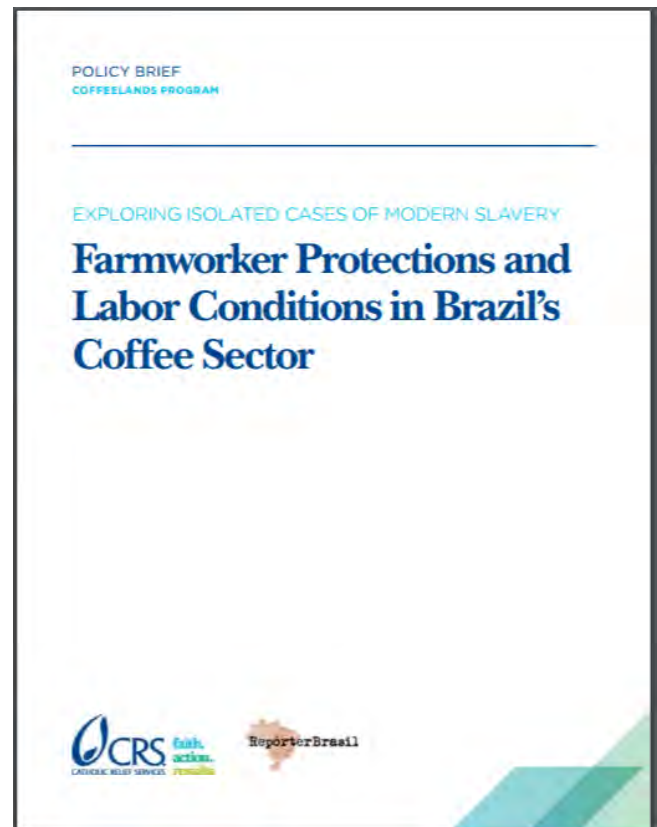
Scope of problem not fully known because of limited capacity for inspections.

PARTNERS

Funded by CRS, Equal Exchange, Fair Trade USA, Farmer Brothers Coffee, Keurig Green Mountain, Mars Drinks, Specialty Coffee Association of America, United Farm Workers, UTZ Certified.

FIND OUT MORE

<http://coffeelands.crs.org/wp-content/uploads/2016/04/CRS-Policy-Brief-Farmworker-Protections-and-Labor-Conditions-in-Brazil%E2%80%99s-Coffee-Sector.pdf>



Forced Labor Priority Principles



OBJECTIVE

The Consumer Good Forum Priority Industry Principles help guide the necessary changes that eliminate forced labor. CGF members work to uphold these practices in their own operations and use their collective voice to promote the adoption of these priority principles industry-wide.

DESCRIPTION OF THE TOOL

Based on 3 principles

- Every worker should have freedom of movement.
- No worker should pay for a job.
- No worker should be indebted or coerced to work.

CREATED BY

Consumer Goods Forum

GEOGRAPHIC FOCUS

Global

QUESTIONS THE TOOL CAN ANSWER

- How to identify and address issues and geographies of shared concern, enhancing the efficiency of any individual company initiative?
- How to develop joint action plans supporting the eradication of forced labor?

PARTNERS

European Retail Round Table, EuroCommerce, Food and Consumer

Products of Canada, Food Drink Europe, GMA, GS`, NACDS, CONMEXICO, AIM, ANTAD, Australian Food & Grocery Council, RCC, FG:C, FIA, FMI, ECR.

FIND OUT MORE

<https://www.theconsumergoodsforum.com/initiatives/social-sustainability/key-projects/priority-industry-principles/>

EVERY WORKER SHOULD HAVE FREEDOM OF MOVEMENT 

 **NO WORKER SHOULD PAY FOR A JOB**

 **NO WORKER SHOULD BE INDEBTED OR COERCED TO WORK**

IMPROVED LABOR PRACTICES + SUPPLY

OBJECTIVE

Develop a rating tool that informs consumers of corporate performance on eliminating forced and child labor using information reported by the companies themselves.

DESCRIPTION OF THE TOOL

Assessments for coffee and other products based on company performance on workers' rights, monitoring, policies and transparency.

CREATED BY

Not for Sale Campaign

GEOGRAPHIC FOCUS

Global

QUESTIONS THE TOOL CAN ANSWER

- Which companies present the most risk for child labor and forced labor in their supply chains?

ASSUMPTIONS

Uses the USDOL/ILAB List of Goods produced by Child and Forced labor. For monitoring of supply chains, it assesses and rates a company with a grade system from A to F on whether a company has:

- a) internal systems,
- b) third party systems and
- c) quality audits.

LIMITATIONS

Larger brands could possibly rate higher than smaller brands in terms of monitoring, policies and so forth. However, Free2work used

certain parameters such as worker ownership from production to sale, price paid from consumer to workers etc. to rate smaller companies higher.

PARTNERS

NGOs and Consumer Advocacy groups.

FIND OUT MORE

<https://www.facebook.com/Free2Work/>

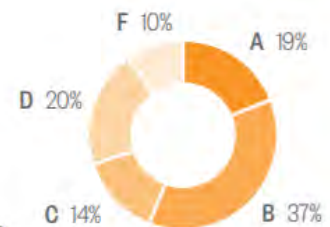
Consumer rating data will be provided in May 2018 by The Abolish Foundation who are releasing the BuyFair App in two phases. In Phase 1, consumers can petition their favorite brand to release information on their supply chains. During the second phase; once information released, the company will be rated on risks to modern slavery and labor exploitation in their supply chain. More available here:

<http://www.abolishfoundation.com/call-to-action/>

GRADE IMPROVEMENT

66%

OF BRANDS ASSESSED
IN BOTH 2013 & 2015
IMPROVED THEIR GRADES



DESCRIPTION

The GLWC is a coalition working to train 20 researchers and complete 18 benchmark and wage studies. It publishes regionally-specific living wage studies, using a rigorous, published methodology developed by Coalition partners Richard Anker and Martha Anker. These studies calculate living wages for workers based on the local costs of a decent standard of living for an average size family. GLWC members and partners use the information to facilitate dialog with organizations, workers, farms and other supply chains actors. The benchmarks inform efforts to close wage gaps by, among other things, providing a tool to help set targets and reasonable timelines for wage improvement planning.

CREATED BY

ISEAL members

GEOGRAPHIC FOCUS

Pilot studies completed for Brazil, Ethiopia, China, Bangladesh, Tanzania, India, Nicaragua, Ecuador, Vietnam, Pakistan, Sri Lanka, Mexico, India, Costa Rice, & Rwanda.

QUESTIONS THE TOOL CAN ANSWER

- How is a living wage determined for a country?
- What is an appropriate target and timeline for reaching a living wage?

ASSUMPTIONS

The work of the GLWC assumes a shared interest among multiple donors, governments, civil society organizations, companies and

individuals in increasing value for actors across supply chains, including workers.

LIMITATIONS

The benchmarks are region specific. Ultimately, mission success for the GLWC depends entirely on multi-stakeholder collaboration, and the willingness of different actors to improve the working conditions of workers.

PARTNERS

Fairtrade International, Forest Stewardship Council, GoodWeave, Sustainable Agriculture Network/Rainforest Alliance, UTZ Certified, Social Accountability International, ISEAL Alliance.

FIND OUT MORE

<https://www.isealalliance.org/get-involved/our-work/global-living-wage-coalition>



Responsible Sourcing Tool



OBJECTIVE

Prevent human trafficking by helping companies understand how risk enters into supply chains and where risk is most likely to affect the supply chain, as well as information about reducing risks through strong policies, screening & evaluation, and compliance management.

DESCRIPTION OF THE TOOL

On-line tool to help companies understand if human trafficking might be hidden in their commodity supply chains.

CREATED BY

Verité

GEOGRAPHIC FOCUS

Global

QUESTIONS THE TOOL CAN ANSWER

- Which countries and commodities present the greatest risk of human trafficking in coffee production?

PARTNERS

State Department's Office to Monitor and Combat Trafficking in Persons, Made in a Free World, Aspen Institute.

FIND OUT MORE

<http://responsiblesourcingtool.org/>



The Trafficking in Persons (TIP) Report



OBJECTIVE

Engage foreign governments and nongovernmental actors to inform of the nature and scope of trafficking in persons around the globe.

DESCRIPTION OF THE TOOL

- Examines where resources are most needed in the global issue of human trafficking.
- Places each country into one of three tiers based on the extent of government compliance with minimum standards of the Trafficking Victims Protection Act (TVPA). If a country appears for several years on a tier, the number of trafficking victims has significantly increased and legislation to address the problem has not been improving, and a country can be placed on a watch list for that tier and in time fall to a lower tier.

CREATED BY

U.S. Department of State

GEOGRAPHIC FOCUS

Global

QUESTIONS THE TOOL CAN

ANSWER

- Which countries are putting efforts towards combatting trafficking in persons by complying with minimum standards required of the TPVA?

ASSUMPTIONS

Minimum standards defined by the Trafficking Victims Protection Act of 2000 (TPVA).

LIMITATIONS

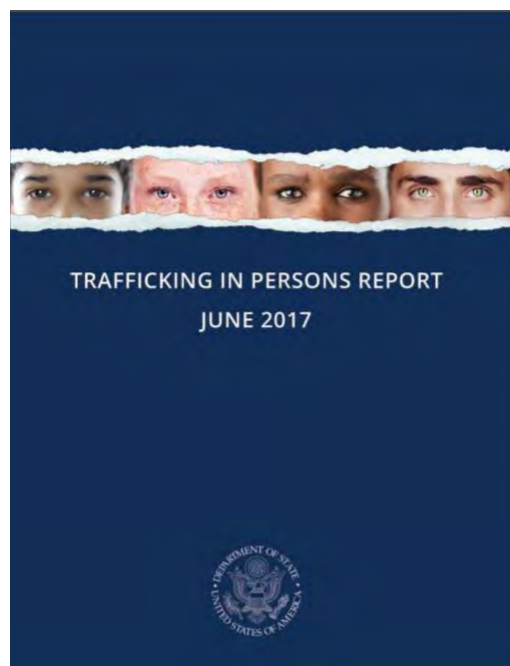
Placement in tier 1 indicates the highest level of government efforts to comply with minimum standards and does not mean that the country has zero human trafficking issues; progress is re-evaluated each year for a country to maintain tier 1 ranking.

PARTNERS

Governments, industries and /or civil society organizations, including trade unions and certification companies.

FIND OUT MORE

<https://www.state.gov/j/tip/rls/tiprpt/>



Understanding the Situation of Workers in Corporate and Family Coffee Farms

Solidaridad



DESCRIPTION

Report providing an assessment of labor issues in Colombia and Nicaragua, including an analytical framework and methodology, as well as case studies.

CREATED BY

Solidaridad and SCA

GEOGRAPHIC FOCUS

Colombia and Nicaragua

QUESTIONS THE TOOL CAN ANSWER

- What are the threats and opportunities for the coffee industry based on the situation of farm workers?
- What are the successful case studies related to labor management?
- What is the situation of farm workers from the perspective of producers and workers?

ASSUMPTIONS

An industry audience familiar with coffee production.

LIMITATIONS

Financial and time constraints limited the scope of the study to two countries, which are not intended to be juxtaposed with one another but rather to demonstrate how cultural and political context affect the situation(s) of workers.

PARTNERS

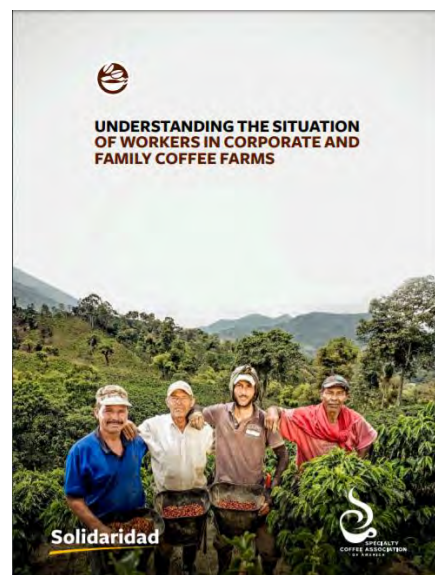
Solidaridad and SCA

KEY LESSONS

The situations of workers on farms large and small in Colombia and Nicaragua share some features, for example, that younger workers don't see a future in coffee farming and workers suffer from low wages. They also face different challenges - while migration is significant in Nicaragua, Colombia's labor laws related to youth engagement present specific obstacles to labor recruitment and training there. In order to address any of these issues, the entire supply chain needs to understand that supporting farmworkers is a priority for building a sustainable value chain.

FIND OUT MORE

<http://www.scanews.coffee/wp-content/uploads/2016/07/Coffee-Workers-report-ING-V81.pdf>



List of Goods Produced by Child Labor or Forced Labor



OBJECTIVE

Raise public awareness of child labor and forced labor around the world to serve as a catalyst for more strategic coordination and collaboration to address the problem.

DESCRIPTION OF THE TOOL

- Valuable resource for organizations or companies seeking to assess risk and perform due diligence research on labor rights in their supply chain.
- The list includes coffee among the common agricultural goods and spans every region of the world.
- The list is updated annually.

CREATED BY

Bureau of International Labor Affairs (ILAB) as part of U.S. Department of Labor.

GEOGRAPHIC FOCUS

Global

QUESTIONS THE TOOL CAN ANSWER

- Which countries present the greatest risk of child labor or forced labor in the coffee supply chain?

ASSUMPTIONS

Definition of child labor follows ILO Convention 182 on the Worst forms of Child Labor, definition of forced labor follows ILO Convention 105, Abolition of Forced Labor. This List is produced in accordance with violations of international standards defined

by the Trafficking Victims Protection Reauthorization Act (TVPRA) of 2005.

LIMITATIONS

Data on child and forced labor is not always available for various reasons. A country's absence from the list does not necessarily indicate child and forced labor is not occurring in the production of goods and services from that country. Conversely, the number of goods on the list from a particular country should not be read as if that country has extensive problems with child and forced labor.

PARTNERS

Governments, industries and /or civil society organizations, including trade unions and certification companies.

FIND OUT MORE

<https://www.dol.gov/ilab/reports/child-labor/list-of-goods/>



Verisk Maplecroft Forced or Involuntary Labor Index



OBJECTIVE

Assess the potential risk of business complicity in the use of forced labor in international operations or by supply chain partners.

DESCRIPTION OF THE TOOL

The index is created by analyzing 196 countries for the frequency, duration, coverage and severity of reported forced labor violations.

CREATED BY

Verisk Maplecroft

GEOGRAPHIC FOCUS

Global

QUESTIONS THE TOOL CAN ANSWER

- Which countries present the greatest risk for forced or involuntary labor?

ASSUMPTIONS

Definition of forced labor follows ILO Conventions 29 on Forced labor and 105, Abolition of Forced Labor, including UNTOC definition of trafficking in persons (Protocol to Prevent, Suppress and Punish Trafficking in Persons Especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime).

LIMITATIONS

This private risk analysis firm does not provide details about its methodology, although it does publish periodic analysis

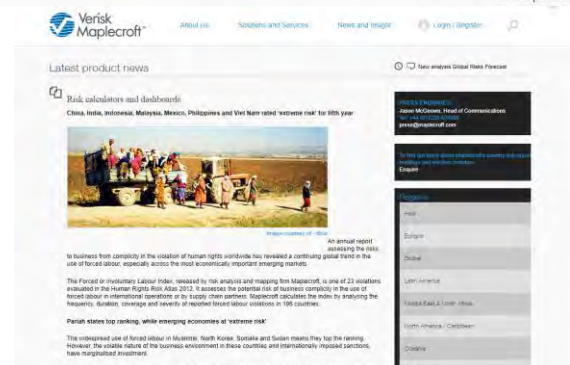
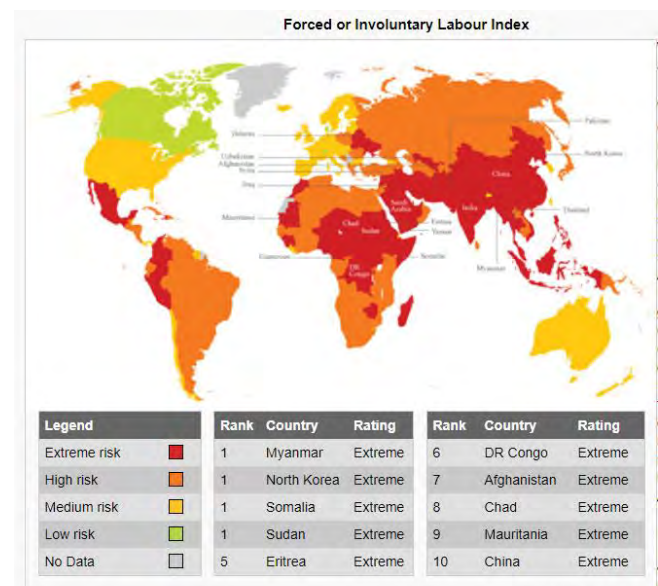
reports. The Forced Labor Index covers forced labor in general and provides an analysis of individual country performance. Access to the Index is available for a fee.

PARTNERS

International Labor Organization (ILO), the UN Global Compact

FIND OUT MORE

<https://maplecroft.com/about/news/forced-labour.html>



WHITE PAPER: COSTS + ROI OF GOOD LABOR PRACTICES

– STRENGTHENING THE BUSINESS CASE FOR ACTION

Objective: Understand the average cost for a farm to implement good labor practices and whether there is an immediate or long-term return on investment in terms of productivity and/or quality.

Research Questions:

- What is the difference in cost of production between a farm implementing good labor practices and one that does not? How does this differ based on the size of a farm?
- What is the perceived value of implementing good labor practices among farmers?
- Are there correlations between good labor practices and improved quality and/or productivity of the coffee? Can we quantify the value of these practices?
- Do farmers that implement good labor practices have higher or lower costs of production than average farms? Is there a break even point?

Proposed Methodology: Literature review, surveys and interviews, and field research in a particular priority country (e.g. Colombia, Guatemala)

- Mine data from certification and/or verification programs as available to understand relationship between compliance with good labor practices and productivity on these farms.
- Conduct a case study of a small set of farms representing the diversity of labor systems and practices (smallholder with harvest labor, medium farm with live-in and harvest labor, large farm with live-in, permanent and temporary labor). Establish baseline, understand the investment being made into improvements and monitor change in quality, uptake in marketplace and productivity at end of investment.

Outputs: Methodology for assessing costs and return on investment for good labor practices. Report with findings and recommendations

Timeline: May– October (6 months)





COFFEE FARM RENOVATION & REHABILITATION

Accelerating the responsible renovation and rehabilitation of coffee farms and making it possible for every coffee farmer to undertake efforts as a regular part of doing business by sharing experiences, incorporating best practices and coordinating efforts + resources.

© STARBUCKS



FARM RENOVATION + REHABILITATION NETWORK MEMBERS

- | | |
|---|---|
| <ol style="list-style-type: none"> 1. 35 North Coffee* 2. Brazil's Association of Organic Coffee (ACOB) 3. Caffe Ibis Coffee Roasting Co.* 4. Conservation International* 5. Counter Culture Coffee* 6. Catholic Relief Services 7. ECOM* 8. Fairtrade International 9. Fundación Cohonducafe 10. HRNS* 11. IDH* 12. illycaffè 13. International Center for Tropical Agriculture (CIAT)* 14. Koffiebranderij J.W. Hesselink & Zn BV* 15. Mexico's SAGARPA* 16. Moyee Coffee* 17. PUR Projet* 18. Rise Up Coffee Roasters* | <ol style="list-style-type: none"> 19. Root Capital* 20. Rwanda - National Agricultural Export Development Board (NAEB)* 21. Specialty Coffee Association* 22. Starbucks* 23. Sumerian Coffee* 24. Supply Shift 25. Sustainable Food Lab* 26. TechnoServe* 27. Tuungane Women's Coffee Cooperative* 28. The Sustainability Consortium* 29. USAID* 30. USDA* 31. UTZ* 32. Vigilante Coffee Company* 33. Winrock International 34. World Coffee Research* |
|---|---|

**Denotes Sustainable Coffee Challenge partner*



OUR TARGET

JOINT COMMITMENT TO 1 BILLION TREES BY 2025

A joint commitment to sustainably renovate & rehabilitate coffee farms by applying techniques such as replanting, stumping, and rejuvenation pruning of 1 billion coffee trees.

Filling the gap between existing initiatives and the 1 billion tree target by 2025

New trees or rejuvenation pruning count toward the target

- 1) Individual supply chain efforts
- 2) Coordinated programs within a select landscape or
- 3) Pooled investments in supply chains or region



REACHING THE TARGET

Providing support to stimulate investments by...

DISTRIBUTING KNOWLEDGE

Sharing knowledge on renovation and rehabilitation to improve farmer yields and meet future demand for coffee.

+

CREATING INCENTIVES

Research to identify sources of funding for partners and collective fundraising to secure match funding for investments.



COLLECTIVE INDICATORS

- # of TREES
- # of NEW COMMITMENTS that relate to R&R

-
- \$ FINANCED / INVESTED
 - HECTARES impacted
 - FARMERS reached
 - COUNTRY level commitments
 - YIELD or another performance indicator (tbd)



CALCULATIONS BEHIND TARGETS

- In the Guidebook, Dalberg calculates that 4 million hectares need some form of renovation or rehabilitation.
- Using an average of 3,500 trees per ha, the global need for R&R is around 14 billion trees.
- The 1 billion tree target (or 285,500 ha) represents ~7% of global need.
- Assuming an annual target of 100 million trees / 28,500 ha, that yields 1 kg / tree, new trees could generate an additional 1.6 million bags (60 kgs).
- This is roughly 1% of current global production, with annual growth rate in global consumption cited by ICO as 1.3%.

Global Coffee Consumption

Data as at 14 October 2016 - next update January 2017



151.3 million

Estimated number of 60 kg bags of coffee consumed in coffee year 2015/16 (Oct. 2015 to Sep. 2016)



1.3%

Average annual growth rate in global coffee consumption since coffee year 2012/13

OUTPUTS TO DATE

- Renovation & Rehabilitation for Resilient Coffee Farms: *A Guidebook for Roasters, Traders and Supply Chain Partners* (USAID funded)*
 - Executive summary & Full version
- Country Data Sheets for Renovation & Rehabilitation (USAID funded)*
- One-page overview of organization specific R&R efforts, in addition to in-depth case studies and project database that is included in the Guidebook
- Investment fund opportunity database + related fund fact sheets



**Available at sustaincoffee.org website*



USAID Bureau for Food Security
**Renovation & Rehabilitation for Resilient Coffee Farms:
A Guidebook for Roasters, Traders and Supply Chain Partners**
Executive Summary
November 2017



Disclaimer and acknowledgements

Disclaimer

This Guidebook, funded by USAID's Bureau for Food Security under Contract No. GS-10F-0188V, has been written by Dalberg Advisors on behalf of the Sustainable Coffee Challenge Collective Action Network on Renovation and Rehabilitation.

Although the authors have made every effort to ensure that the information in this report was correct at time of print, Dalberg Advisors does not assume and hereby disclaims any liability for the accuracy of the data, or any consequence of its use. The opinions expressed herein are those of the author(s) and do not necessarily reflect the views of the U.S. Agency for International Development

Acknowledgements

Dalberg would like to thank the Technical Committee who provided input throughout the process: Conservation International, International Center for Tropical Agriculture (CIAT), Hanns R. Neumann Stiftung (HRNS), Root Capital, Starbucks, USAID and World Coffee Research.

November 2017



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Foreword: The Sustainable Coffee Challenge

Dear reader,

A key tenet of the Sustainable Coffee Challenge is to encourage the industry to work collaboratively to find effective solutions that address the challenges facing coffee. One of those challenges is deteriorating tree stock, particularly on smallholder coffee farms. In fact, renovation and rehabilitation (R&R) best practices could benefit more than 50% of the 7 million hectares of smallholder coffee lands. Though there has been over USD 1.2 billion already invested in R&R efforts by governments and supply chain actors, we've still only scratched the surface in terms of the need.

So how will we meet this challenge? Over the past several months, partners in the Sustainable Coffee Challenge have set out to address the need for healthy, productive trees. As part of this effort, the network has established a collective target of sustainably renovating and rehabilitating 1 billion trees. In addition, with the generous support of USAID's Bureau for Food Security, Dalberg Advisors has developed the following Guidebook on behalf of the group.

The Guidebook is a rich resource for companies, governments, investors, and service providers alike. The document can help you partner up with an existing effort, start a new effort, or even refine your current program. If you are interested in learning the basics on R&R, then we suggest you review the Executive Summary. If you are a practitioner already familiar with R&R and are eager to dive into details, we suggest you start with Section 3: How to Make R&R work. In this Guidebook, you will find numbers behind the need, rich case studies with lessons from the field, decision trees to determine appropriate program structures and financial models, and much more!

Though there is still much to learn about R&R, we sincerely hope this Guidebook provides lessons and recommendations that help reduce the learning curve while aspiring new, bold commitments to supporting the sustainable renovation and rehabilitation of coffee farms around the globe.

Enjoy!

Bambi Semroc
Vice President, Conservation International

To find out more about the R&R Network or the Sustainable Coffee Challenge, visit www.sustaincoffee.org

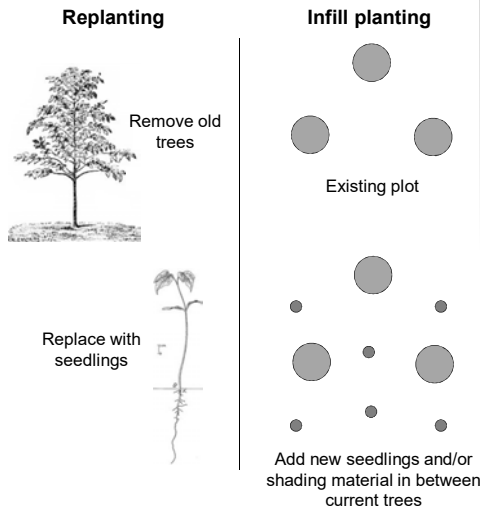


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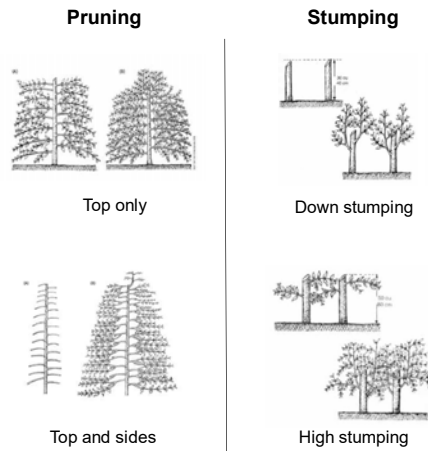
'Renovation' and 'rehabilitation'- R&R – are methods to increase the productivity of coffee trees

Executive summary

Renovation



Rehabilitation

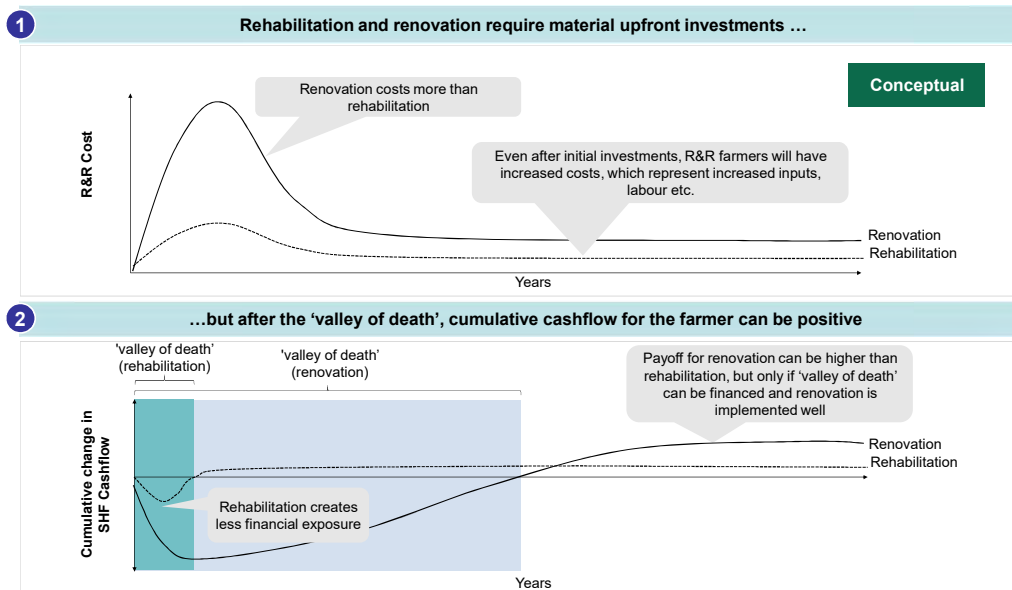


Notes: Illustrations are from: ACOP, *Producer training project: Sustainable Technologies to Boost Productivity, Resilience to Severe Climate, Coffee Quality, and Livelihoods of Brazilian Coffee Farmers*, 2017

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Over time, R&R can deliver a net benefit to the farmer, despite a short term loss of yield and income

Executive summary



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At the farmer level, tree age, diseases and pests, poor agricultural practices, and climate change are the key drivers of R&R need

Executive summary



Old tree age: With time, trees produce less coffee. At some point they can no longer be rehabilitated back to profitable yields and therefore need to be replanted¹



Diseases and pests: Some mild diseases and pests can be overcome without replanting (e.g. by having well-managed trees), whereas more severe outbreaks can necessitate replanting (with new resistant varieties)



Climate change: Increasing temperatures can demand replanting with drought/disease-resistant varieties, or varieties that are particularly suited to yield in certain climatic conditions



Poor agricultural practices: Poor agricultural practices can lead to the deterioration of trees to the point where they require R&R. It is important that R&R is *always* accompanied by GAP to prevent the same decline from happening again

Global need for smallholder R&R is 4 million hectares: equivalent to the entire harvested area of Brazil, Vietnam, Colombia and Ethiopia.

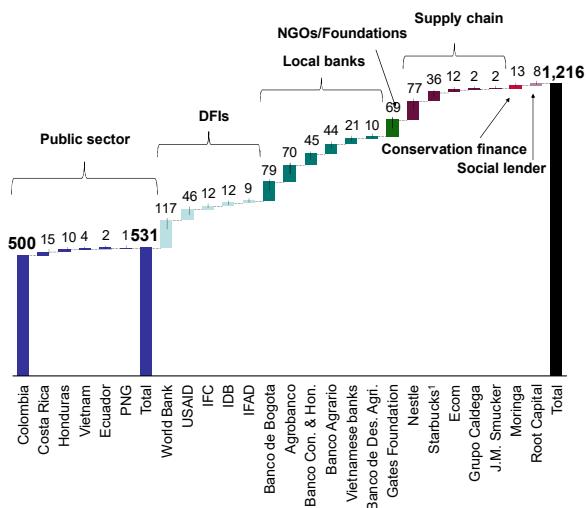
Notes: (1) The exact age when this happens varies enormously and depends (among other things) on SHF current agricultural practices. As a general rule, replanting should not be considered before trees are 20 years or older, assuming that they are otherwise healthy and well-managed, though some trees might perform well much longer than that.

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Governments and actors in coffee value chains have invested USD 1.2 billion in R&R so far, but this has only met around 5% of the smallholder farmers in need

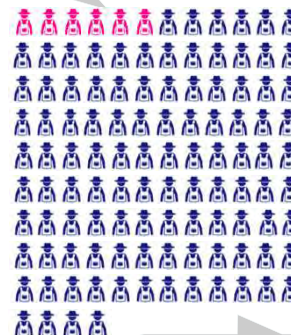
Executive summary

R&R investments to date - channeled by finance providers (non exhaustive estimate)
USD millions



Estimated number of farmers reached by past and current R&R programs

Around 600,000 farmers have been reached by programs to date



We estimate that around 11.5 million coffee farmers are in need of R&R globally

Legend

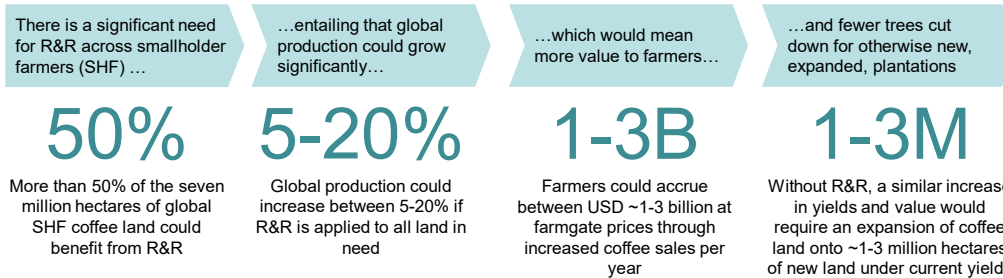
- Farmers reached by R&R programs
- Farmers in need of R&R
- 100,000 farmers

Notes: (1) USD 4 million of Starbucks' commitment overlaps with Root Capital. Source: Dalberg analysis. See full Guidebook for notes and methodology

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If we did reach the farmers in need of R&R, benefits would include more coffee, higher incomes for farmers, and reduction in future deforestation

Executive summary

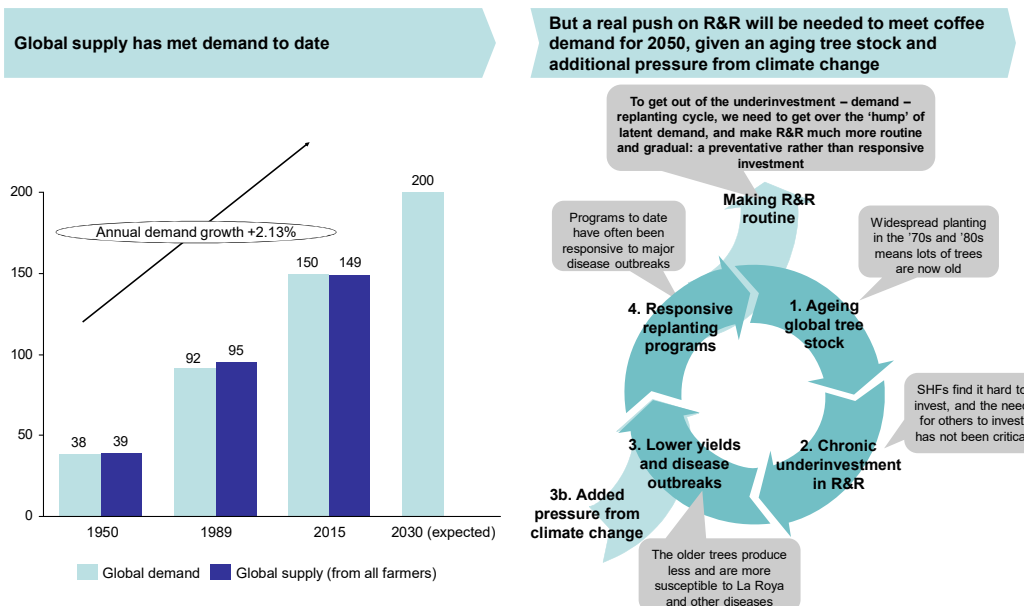


Source: Dalberg analysis. See full Guidebook for notes and methodology

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Meeting this R&R need will be crucial to securing coffee supply for 2050 and beyond – especially in the light of increasing global temperatures

Executive summary

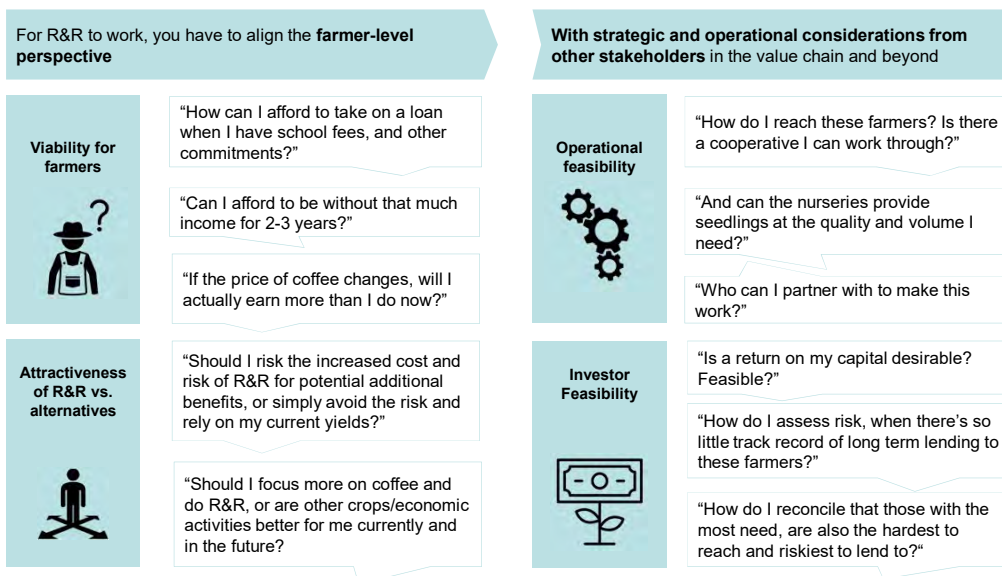


Source: Dalberg analysis. See full Guidebook for notes and methodology

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But there are no current 'quick fixes' to R&R– not for farmers, nor for actors who implement R&R programs

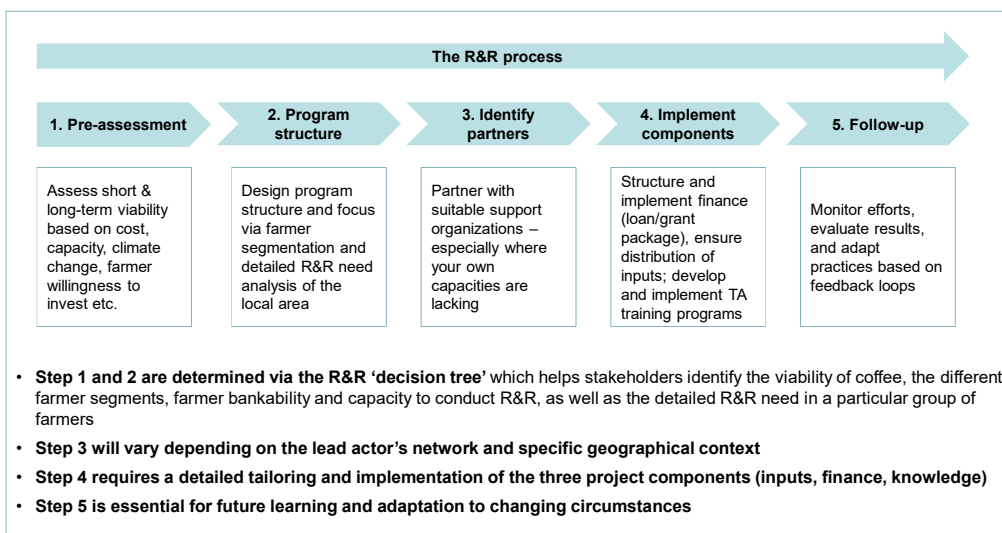
Executive summary



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Looking at the issue top-down, there are five central steps to a successful R&R program

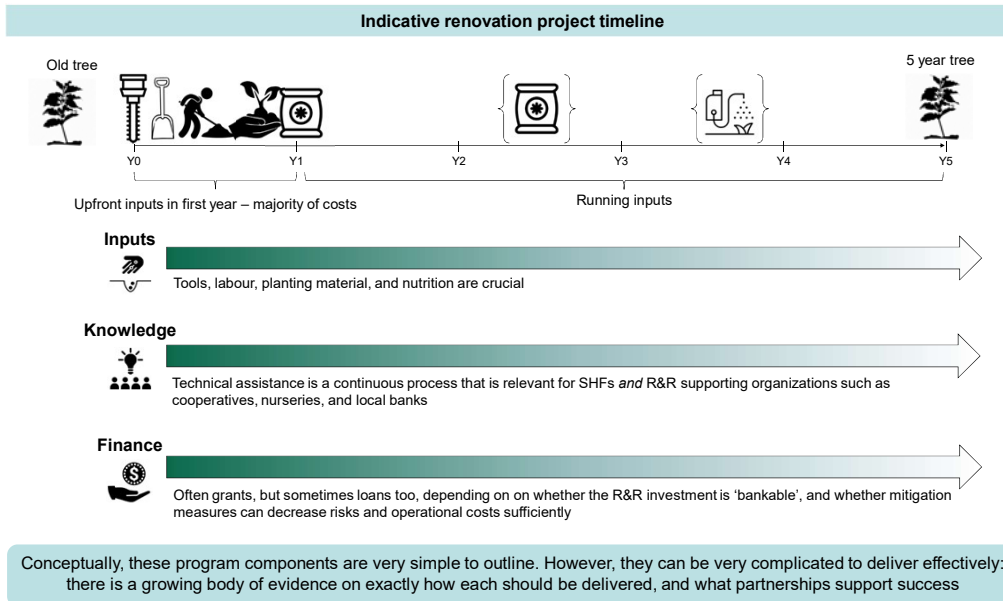
Executive summary



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And we are getting much better at knowing how to do R&R well (and what not to do!)

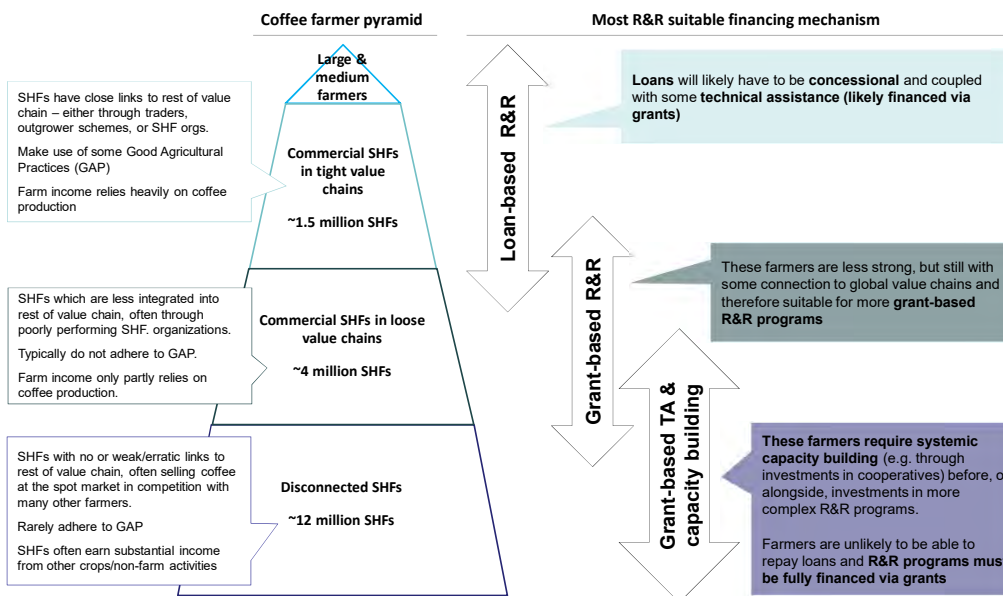
Executive summary



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For example, concessional loan R&R programs are better suited to the top of the farmer 'pyramid', while grants are better suited to the bottom and middle

Executive summary



Source: Dalberg analysis. See full Guidebook for notes and methodology

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But business as usual will not meet the more than 10 million smallholder farmers in need across the globe

Executive summary

Current efforts have fallen short and not targeted the farmers most in need



1. 40 R&R projects focused on SHFs to date have only met 5% of the farmers in need
2. These projects have all have been concessional in financing; many have been philanthropic
3. Most programs have targeted the slightly less risky, bigger and better connected farmers

This is not enough



4. There is a limit to how much concessional or philanthropic finance is available. It will not get us to all the farmers in need



5. Those farmers at the 'bottom of the pyramid' who have been less reached, have the greatest need for R&R, and the most to gain

The future must be both 'more', and 'different'



More effort is needed: more investors, more delivery organizations; more study of what works, more sharing of lessons learned



Innovations in finance and delivery are needed to significantly de-risk R&R to the point where it is much more appealing for farmers themselves, and for more commercial capital

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A natural starting point is for value chain players to start (or expand) R&R activities with their own farmers

Executive summary

Value chain actors are well positioned to start/expand their engagement in R&R...

...There are a number of benefits for those that take action...

...and this Guidebook can help you get started (or adjust your approach if you are already investing)



- Increased security of supply
- Closer links with farmers
- Social impact – improving farmer livelihoods
- Environmental impact: decreasing deforestation
- Increased licence to operate in a given country
- Brand value/PR/reputational risk management

- Section 3.1 outlines a number of questions on coffee viability, farmer segmentation and detailed R&R need that will help you engage with your own farmer supply base
- These questions can also help refocus and adjust your approach if you are already engaged in R&R
- Depending on your size, you may need to partner with actors in your supply chain, as well as R&R support organizations

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Further, this Guidebook identifies seven major needs for the R&R sector, from scaling up existing approaches, to laying the foundations for future R&R

Executive summary



Expand current programming models.

Current programs work well at reaching certain types of SHFs and with 90% of the R&R need unmet, there is a clear and important need to scale up existing programs



Fill data gaps on R&R need, and farmer segmentation

Data on R&R need is scarce globally, often based on expert estimates of how many SHFs there are, and what their links to markets are. Implementers must share lessons learned more widely



Innovate in delivery to dramatically reduce costs

R&R costs vary significantly across countries, but will need to be dramatically reduced for R&R to become feasible for farmers at the 'bottom of the pyramid', including:

- Re-think how inputs are delivered
- Explore if there are lower cost options of delivering the technical assistance at scale



Innovate in finance to leverage commercial capital, and to reach farmers further down the pyramid

- Blended finance models are needed to bring in commercial capital – essential for scale
- Innovations in de-risking lending are needed for the sector to provide returnable capital to farmers who are now only reached through grants



Better understand possible rehabilitation outcomes

The choice between renovation and rehabilitation is not always clear, but renovation has received the majority of the attention, with more projects/investment, and more data on outcomes. Rehabilitation has lower costs and risks, and the sector should seek to better understand what outcomes can be driven through rehabilitation and how often this is 'enough'.



Build R&R support systems by strengthening coops, nurseries, local banks, research institutes etc.

For many countries, the constellation of actors needed for successful R&R is not present and/or capable. These longer term, system-building investments are not glamorous, and hard to justify for value chain partners, but they are nonetheless essential for future R&R efforts



Join others in advocating to governments for the value of R&R








And for best practice in delivering R&R. Governments' budgets and inclusive focus mean their R&R investments can target those farmers that others struggle to reach

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For some combinations of actor and need, the business case is clear: the text boxes below represent great places to start

Executive summary

Areas for increased R&R action – by type of actor and R&R need

R&R need	Roaster/trader/ retailer	Financial institution	Donor	SHF support organization/ NGO	R&D Center/ University	Government
	Clear need to expand programming using existing models – almost always in partnership with other actors Should use decision tree-type analysis to target programming					Yes – where coffee is a key part of the economy
	Scale up sharing of lessons learned and data from programs for the benefit of entire sector				Continue to do research and experimentation	
	Larger players could devote some resources to experimental programming		Ability to focus on non-financial definitions of success is a strength here			
		Key role here, for donors, DFIs, social lenders, and local banks to innovate in financing structures				
	Should use decision tree analysis to understand where rehabilitation might be the right choice				Do more research on benefits of rehabilitation versus renovation	
	Relevant for larger actors who can justify programming without tangible benefits back to the business		Focus on public goods that is not always feasible for the private sector	Relevant where there are specialist skills e.g. cooperative strengthening		Focus on public goods that is not always feasible for the private sector
	Significant opportunity – governments are the biggest investors in R&R and can reach the whole pyramid: catalyzing government action would be excellent leverage on others actors' resources					

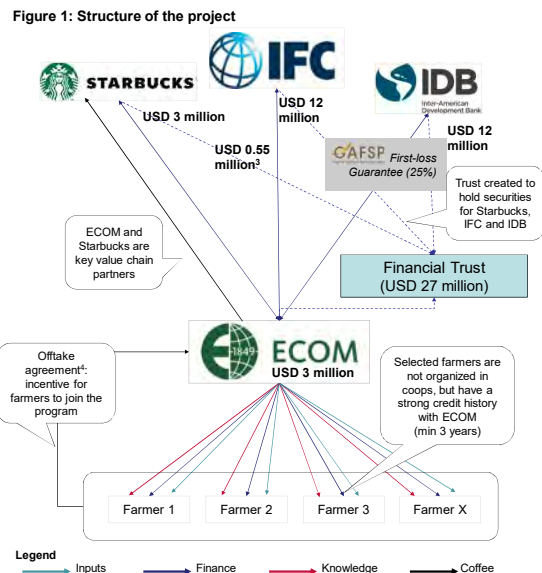
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- 1 **Read this Guidebook to find out much more** about R&R: More than 130 pages packed with details on how to choose between renovation and rehabilitation, what lessons we have learned on delivery, how to finance R&R, and more....
- 2 **Share your ambitions, and plans. Find partners. Share what worked and why? Share what did not.**
- 3 **Join the Sustainable Coffee Challenge:** join the Collective Action Network on R&R



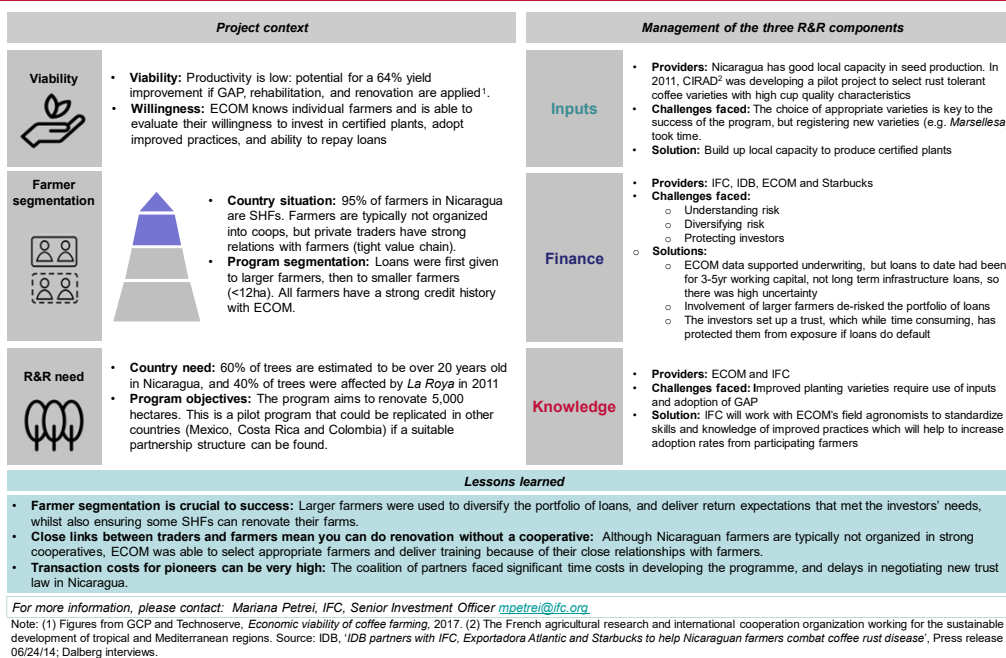
Case study 1: ECOM’s close relationship with Nicaraguan farmers has been used to setup a direct and innovative renovation financing mechanism (1/2)

ECOM – IFC – IDB – Starbucks facility											
R&R type	Loan-based renovation										
Country	Nicaragua										
Cost	USD 30 million										
Dates	2011 – 2025										
Project context	<ul style="list-style-type: none"> In 2013, <i>La Roya</i> affected 40% of coffee plantations in Nicaragua creating the need for a large renovation program. The coffee sector is loosely regulated. Private traders² have a strong presence in the country and have tight relations with farmers in their supply chain. 										
Objectives, activities, and results	<ul style="list-style-type: none"> The program aims to renovate up to 5,000 hectares (~5% of total coffee area in Nicaragua) via loans to ~550 farmers. The target is to renovate 1/3 of farmers' land. It is still too early to estimate final yield uplifts, but preliminary results look promising. Value creation: Improved planting material with certified plants that are tolerant to rust and improved quality attributes and improved livelihoods Value capture: ECOM and Starbucks secure supply; SHFs through increased incomes 										
Loan details	<table border="1"> <tr> <td>Borrowers</td> <td>Farmers with an ECOM credit history</td> </tr> <tr> <td>Currency</td> <td>USD</td> </tr> <tr> <td>Tenor</td> <td>Up to 8 years</td> </tr> <tr> <td>Grace period</td> <td>3 years (interest only)</td> </tr> <tr> <td>Interest rate</td> <td>Affordable in the one to two digit range and depending on the credit profile of the farmer</td> </tr> </table>	Borrowers	Farmers with an ECOM credit history	Currency	USD	Tenor	Up to 8 years	Grace period	3 years (interest only)	Interest rate	Affordable in the one to two digit range and depending on the credit profile of the farmer
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Notes 1) IFC mobilized project partners IDB, Starbucks and ECOM to design and set up the program. (2) ECOM, Mercor, and OLAM trade 90% of Nicaragua's coffee. (3) In parallel with IDB's loan for this project, a grant from the IDB's Multilateral Investment Fund (MF) is planned as part of a technical assistance package totaling USD 546,305. The package aims at supporting the management of ECOM's portfolio of credits to small producers. (4) Starbucks committed to buy coffee guaranteeing a minimum price providing protection to farmers. Source: IDB, IDB partners with IFC, Exportadora Atlántica and Starbucks to help Nicaraguan farmers combat coffee rust disease'. Press release 06/24/14, Dalberg interviews.

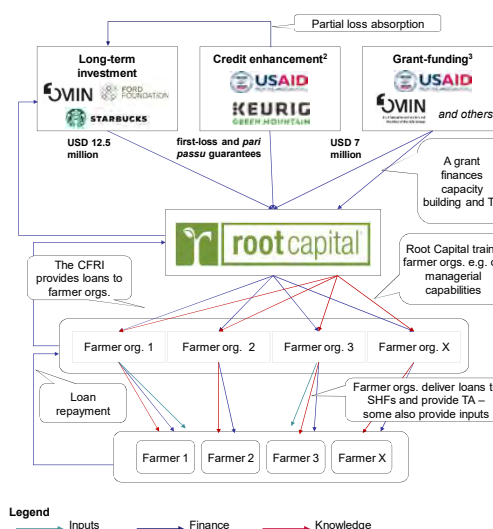
Case study 1: ECOM's close relationship with Nicaraguan farmers has been used to setup a direct and innovative renovation financing mechanism (2/2)



Case study 2: Long-term loans for renovation are provided by a blended finance facility to farmer organizations in Latin America (1/2)

Coffee Farmer Resilience Initiative – Root Capital											
R&R type	Loan-based renovation										
Countries	Honduras, Nicaragua, Peru										
Cost	USD 7.7 million in loans approved										
Dates	2014 - 2016										
Project context	<ul style="list-style-type: none"> In 2011/12, <i>La Roya</i> affected almost 50% of the total coffee growing areas in Latin America, significantly reducing the SHF production. <i>La Roya</i> outbreak revealed decades of underinvestment in the coffee sector. Over 60% of trees in the region had passed the productivity peak and were more exposed to the disease. 										
Objectives, activities, and results	<ul style="list-style-type: none"> Root Capital provided loans to SHF orgs who then distribute to SHFs to support the upfront cost of R&R. Root Capital also provided technical assistance (free to SHF orgs.) and challenge grants (with cost-share from orgs) to build org. capacity to implement R&R programs. USD 7.7M in loans were approved to 8 orgs. in Honduras, Nicaragua, and Peru.¹ Value creation: increased yields and strengthened SHF capacity Value capture: farmer groups selling higher volumes of coffee 										
Loan details	<table border="1"> <tr> <td>Borrowers</td> <td>Farmer aggregations (e.g. coops)</td> </tr> <tr> <td>Currency</td> <td>USD</td> </tr> <tr> <td>Tenor</td> <td>3-7 years</td> </tr> <tr> <td>Grace period</td> <td>1-3 years</td> </tr> <tr> <td>Interest rate</td> <td>7-10.5 APR</td> </tr> </table>	Borrowers	Farmer aggregations (e.g. coops)	Currency	USD	Tenor	3-7 years	Grace period	1-3 years	Interest rate	7-10.5 APR
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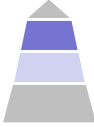
Figure 1: Financial structure of the project and finance delivery to SHFs



Notes: (1) TA and challenge grants were extended to an additional 25+ orgs in El Salvador, Guatemala, Honduras, Mexico, Nicaragua, and Peru. (2) Keurig Green Mountain provided a first-loss guarantee of USD 400,000 (~3% of target credit disbursements). USAID provided a 50% *pari passu* guarantee of up to USD 15 million (i.e. USAID absorbs USD 0.50 of the loss for every dollar not repaid by eligible borrowers after the USD 400,000 in first-loss coverage has been used). (3) Specialty coffee roasters Cooperative Coffees, Equal Exchange, and Keurig Green Mountain channelled funding for technical assistance. Other donors (incl. the DOEN Foundation Open Road Alliance, the Multilateral Investment Fund of the IDB Group (FOMIN), the Skoll Foundation, and the Swedish Postcode Foundation, and USAID) provided grant funding to cover cost associated with program design, technical assistance, etc.²⁸

Source: Root Capital, *Learning Report: The Coffee Farmer Resilience Initiative*, 2016.

Case study 2: Long-term loans for renovation are provided by a blended finance facility to farmer organizations in Latin America (2/2)

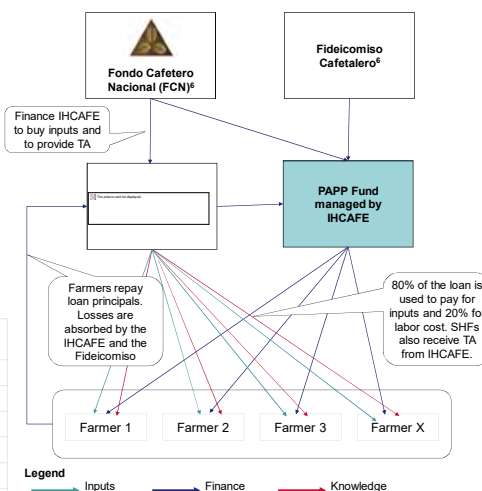
Project context		Management of the three R&R components	
<p>Coffee viability</p> <ul style="list-style-type: none"> Relevance: SHFs in Latin America have potential for yield uplift by applying GAP and R&R (e.g. potential of 31% net income increase from yield improvements in Honduras, 64% in Nicaragua, and possible double of yields in Peru¹). Willingness: Farmer public sector (or other farmer organizations) have an intimate understanding of the needs and production capacity of their members and can evaluate their willingness and credit worthiness. 	<p>Farmer segmentation</p>  <ul style="list-style-type: none"> Country situation: In the three countries, coffee producers are SHFs. Their degree of integration within value chains vary by country. Program segmentation: The program targets SHFs in tight value chains, mostly members of farmer orgs. such as coops or private coffee mills. Some farmers in loose value chains were also targeted via through savings and loan cooperatives where the coops were less strong. 	<p>Inputs</p> <ul style="list-style-type: none"> Providers: Third parties Challenges faced: SHFs must have access to upfront and ongoing inputs. SHF orgs. must have the capacity to source and deliver appropriate inputs. Solution: Root Capital only selects SHF orgs. that are able to manage selection and application of adequate farm input. A Root Capital approved agronomist assists SHF orgs. with preparing their input delivery plan for SHFs. 	<p>Finance</p> <ul style="list-style-type: none"> Providers: Various (cf. previous slide) Challenges faced: Understanding risk and bringing together funders with aligned risk appetites; protecting investors Solution: <ul style="list-style-type: none"> Root Capital conducted intensive due diligence. Selected SHF orgs. must have adequate sources of internal financing to cover at least 20% of the R&R investment. Root Capital also assessed credit risk using in-house tools developed over 15+ years². Using a blended finance structure to partially de-risk the investment³.
<p>R&R need</p> <ul style="list-style-type: none"> Country need: Almost 900,000 ha would benefit from R&R in Nicaragua, Peru, Mexico and Honduras. Program objectives: Building the capacity of SHF orgs. and farmers to recover from the La Roya outbreak and build resilience for the future through R&R 	<p>Knowledge</p> <ul style="list-style-type: none"> Providers: Root Capital Challenges faced: Most of the farmer groups lack the ability to manage R&R loans for SHFs. Solution: 35 trainers delivered financial advisory services to managers and accounting staff of Root Capital's potential or existing clients. Training focuses on managerial, organizational, technical capacities, with a focus on orgs' internal credit and technical assistance services 		
<p>Lessons learned</p> <ul style="list-style-type: none"> Leveraging blended finance structures enables lenders to partially de-risk R&R investments: Root Capital used a blended finance structure to align the incentives and risk appetites of the different funders. Mechanisms of partial loan guarantees, risk-sharing, reserves for first-loss capital, and technical assistance funds helped to mitigate risks. These types of blended finance structures should be reproduced to scale R&R financing. Invest in capacity building for aggregation points: Root Capital relies on farmer organizations to deliver and manage loans to SHFs. Many SHF orgs., however, currently lack the capacity to manage large R&R interventions. Strengthening SHF orgs. or other farmer aggregation points, like local microfinance institutions, is needed to scale R&R. 			
<p>For more information, please contact: Elizabeth Teague (Root Capital), eteague@rootcapital.org</p>			
<p><small>Notes: (1) Source: GCP and Technoserve, <i>Economic Viability of Coffee Farming</i>, 2017. (2) Root Capital assesses the credit risk of borrowers using an internal rating system that weighs various risk categories, including scale and buyer diversification, enterprise strength and growth potential, financial flexibility, and financial strategy. This data is combined with the experience and judgment of loan officers to inform a full assessment of credit risk. (3) The funding comes from public and private financiers with different return expectations. Credit enhancements reduce the investment risk, and grant funding dedicated to capacity building reduces the client risk, ultimately reducing the investment risk. Source: Root Capital, <i>Learning Report: The Coffee Farmer Resilience Initiative</i>, 2016; Dalberg interviews</small></p>			

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Case study 3: A blended finance government program enabled the smallest most disconnected SHFs in Honduras to renovate their land (1/2)

Programa de Apoyo al Pequeño Productor (PAPP) - IHCAFE															
R&R type	Loan-based renovation														
Country	Honduras														
Cost	USD 12.5 millions														
Dates	2007/08 – present (no set end date)														
Project context	<ul style="list-style-type: none"> Coffee trees in Honduras have been affected by <i>La Roya</i> and about 60% have passed their productivity peak. 														
Objectives, activities, and results	<ul style="list-style-type: none"> The PAPP was created following a government decree on the reactivation of the coffee sector¹. The program targets a reduction of the poverty at farmer family level through an increase of revenues from coffee production. The PAPP is a three phased-program. 22,827 SHFs were reached and 15,500 ha were renovated. Value creation: increased yields of least productive SHFs and improved livelihoods. Value capture: the program finances a public good. The value is yet to be captured by the financiers. 														
Loan details	<table border="1"> <tr> <td>Borrowers</td> <td>SHFs producing <1.5 tons (phase 1) SHFs producing <3 tons (phase 2-4)²</td> </tr> <tr> <td>Currency</td> <td>HLN (Honduran Lempira)</td> </tr> <tr> <td>Tenor</td> <td>6 years</td> </tr> <tr> <td>Grace period</td> <td>3 years</td> </tr> <tr> <td>Interest rate</td> <td>0%³</td> </tr> <tr> <td>Loan size</td> <td>USD 540 – USD 860⁴</td> </tr> <tr> <td>Default rate</td> <td>Average 30%⁵</td> </tr> </table>	Borrowers	SHFs producing <1.5 tons (phase 1) SHFs producing <3 tons (phase 2-4) ²	Currency	HLN (Honduran Lempira)	Tenor	6 years	Grace period	3 years	Interest rate	0% ³	Loan size	USD 540 – USD 860 ⁴	Default rate	Average 30% ⁵
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Default rate	Average 30% ⁵														



Figure 1: Financial structure of the project and input delivery model



Notes: (1) Decree N.56-2007, *Ley de Reactivación del Sector cafetalero*. (2) On average, a production below 1.5 tons corresponds to a farm size below 1 ha. (3) Interests are fully subsidized by the IHCAFE and the Fideicomiso Cafetalero. (4) HLN 12,500 to HLN 20,000 (5) Default rate were higher during the first phase of the program (42%), 26% during phase 2, and 6% during phase 3. (6) The Fideicomiso Cafetalero are funded through a tax of USD 9.00/quintal of coffee exported. Source: IHCAFE, *Programa de Apoyo al Pequeño Productor*, 2017; IHCAFE, *El sector Café de Honduras. Avances, Institucionalidades y Desafíos*, 2017; Dalberg interviews

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Case study 3: A blended finance government program enabled the smallest most disconnected SHFs in Honduras to renovate their land (2/2)

Project context		Management of the three R&R components	
<p>Coffee viability</p> <ul style="list-style-type: none"> Viability: Honduras has seen an increase in production in the past years, but there is still potential to improve yields by 45%, including through renovation and rehabilitation. Willingness: SHFs benefitting from the program must have coffee as their main crop and comply with the Code of Conduct of the PAPP. 	<p>Country situation: 95% of coffee producers in Honduras are SHFs with less than 7 ha. More than 60% produce less than 1.5 tons of green coffee each year.</p> <p>Program segmentation: Grants were provided to the least productive SHFs during phase 1 of the program. The program was then expanded to more productive farmers (less than 3 tons/year), who often belong to loose-value chains</p>	<p>Inputs</p> <ul style="list-style-type: none"> Providers: IHCAFE Challenges faced: SHFs need renovation package including upfront inputs (seedlings and fertilizers) and ongoing inputs (fertilizers). Solution: 80% of the loan value is used to pay IHCAFE for inputs (seedlings and fertilizers). IHCAFE recommends varieties produced by local institutions and distributes them to farmers. The remaining 20% are used to pay for labor costs. 	
<p>Farmer segmentation</p> 		<p>Finance</p> <ul style="list-style-type: none"> Providers: Fideicomiso Cafetalero. Challenges faced: The PAPP serves the farmers with the lowest financial capacity. Default rate averages 30%. Solution: Loans are highly concessional. The Fideicomiso-IHCAFE absorbs financial losses. The PAPP tries to improve its recovery rate. It is currently implementing a study¹ to segment defaulting farmers, to understand causes of default and to design adaptation strategies. 	
<p>R&R need</p> 	<p>Country situation: Honduras was seriously affected by <i>La Roya</i>. About 187,000 ha (more than 70%) of the coffee trees would benefit from renovation or rehabilitation.</p> <p>Program objectives: The program enabled the renovation of 15,500 ha among the poorest and least productive farmers.</p>	<p>Knowledge</p> <ul style="list-style-type: none"> Providers: IHCAFE agencies² Challenges faced: The least productive SHFs have the highest TA needs. The cost of TA is higher for the bottom of the pyramid. Solution: IHCAFE delivers TA to farmers through individual or group training. The PAPP wants to develop a differentiated Technical Assistance and Capacitation plan to better understand the personalized needs of farmers. 	
<p>Lessons learned</p> <ul style="list-style-type: none"> Reaching SHFs at the bottom of the pyramid requires a specific program design that cannot be made on a commercial basis: SHFs reached by the PAPP have low or no connection to the market and have a low capacity to repay their loan. A program targeting this category cannot reach commercial viability. It should aim at creating positive social and economic impact. Technical assistance for these beneficiaries should be intensive and designed: Providing TA to SHFs at the bottom of the pyramid is costly. Understanding precisely their needs and how to best answer them is crucial to reduce the costs of the project and to ensure a successful implementation. 			
<p>For more information, please contact: Nelson Omar Funez, IHCAFE, nofunez@ihcafe.hn</p>			

Note: (1) The study is supported by Nestle. (2) IHCAFE is covering Honduran territory through a network of 7 regional agencies, 50 extension services agencies with 100 technical officers and 60 para-technical officers and 8 forest engineers.

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Case study 4: A strong government commitment and well-organized coffee institutions in Colombia enabled a successful national renovation program (1/2)

Permanency Sustainability and Future (PSF) – FNC and Colombian Gov.															
R&R type	Loan-based / grant-based renovation														
Country	Colombia														
Cost	Approx. USD 600 million														
Dates	2008 - 2014														
Project context	<ul style="list-style-type: none"> In 1998, the government implemented the Competitiveness Program (CP), with the objective of maintaining competitiveness in densely cultivated coffee growing areas. Between 2008 and 2009, coffee production in Colombia decreased by 32% due to ageing trees and disease. In 2007/08, the National Federacion of Coffee Producers (FNC) and the Government of Colombia implemented the PSF to enable access to credit for SHFs for coffee renovation. Objective: renovate 300,000 hectares in 5 years under the PSF and the Competitiveness programs. Between 2008 and 2014, the PSF provided 216,312 loans to SHFs, enabling the renovation of 184,000 hectares. Value creation: increased yields of least productive SHFs and improved livelihoods Value capture: FNC increases coffee exports, and Fondo Nacional del Café (FoNC)¹ increase revenues 														
Objectives, activities, and results															
Loan and grant details	<table border="1"> <tr> <td>Borrowers</td> <td>SHFs with land between 0.2 - 1.5 ha</td> </tr> <tr> <td>Currency</td> <td>COP (Colombian Pesos)</td> </tr> <tr> <td>Tenor</td> <td>7 years</td> </tr> <tr> <td>Grace period</td> <td>2 years (interest paid by the FoNC¹)</td> </tr> <tr> <td>Interest rate</td> <td>Av. 10%</td> </tr> <tr> <td>Guarantee²</td> <td>100% guarantee</td> </tr> <tr> <td>Grant</td> <td>Grant covering 40% of the principal</td> </tr> </table>	Borrowers	SHFs with land between 0.2 - 1.5 ha	Currency	COP (Colombian Pesos)	Tenor	7 years	Grace period	2 years (interest paid by the FoNC ¹)	Interest rate	Av. 10%	Guarantee ²	100% guarantee	Grant	Grant covering 40% of the principal
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Interest rate	Av. 10%														
Guarantee ²	100% guarantee														
Grant	Grant covering 40% of the principal														

Figure 1: Financial structure of the PSF project

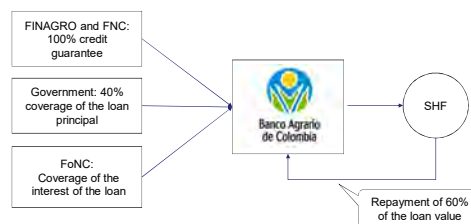
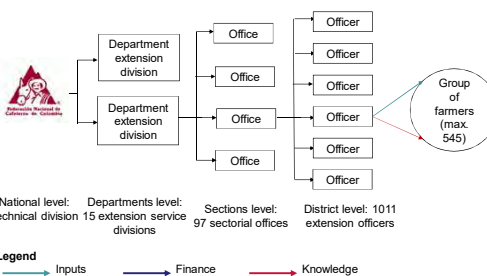




Figure 2: Extension service and inputs delivery model: decentralized model



Notes: (1) The FoNC is financed through a tax of USD 0.6 / lb coffee exported. (2) In 2012, the Fondo Nacional del Café (FoNC) stopped covering loan interest. (3) Guarantees are provided by the National Guarantee Fund (managed by FINAGRO) and the National Coffee Guarantee Fund (managed by the FNC). (4) Rural Capitalization Incentive (ICR). Sources: *Evaluación de impacto de los programas de renovación de cafetales 2007-2011*, Santiago Silva Restrepo. *Renovation and Rehabilitation of crop trees in cocoa, coffee, palm oil*, Rabo Bank – Risk and Finance in the Coffee Sector, The World Bank, February 2015.

Case study 4: A strong government commitment and well-organized coffee institutions in Colombia enabled a successful national renovation program (2/2)

Project context		Management of the three R&R components	
<p>Coffee viability</p> <ul style="list-style-type: none"> Viability: The 32% drop in production in 2009 reveals a potential for production uplift by applying targeted renovation. Willingness: Farmers in Colombia are often conscious of the benefits of renovation, and many undertook renovation without any program support. In 2011, 40% of farm renovations were private farmer initiatives. 		<p>Inputs</p> <ul style="list-style-type: none"> Providers: FNC is in charge of providing seedlings to farmers. Challenges faced: Planting unverified seedlings may lead to high mortality rates of the trees. Solution: FNC provides a full R&R package to SHFs, including planting material (certified seeds and seedlings) and agronomic advice on how to plant them. 	
<p>Farmer segmentation</p>  <ul style="list-style-type: none"> Country situation: There are more than 560,000 coffee farmers in Colombia, of which over 95% are SHFs. The FNC has a network of 34 coops and 530 trading stations that enables an access to market for most of the farmers. Program segmentation: The program targets farmers with land between 0.2-1.5 ha, connected to the market by at least a trading station. 		<p>Finance</p> <ul style="list-style-type: none"> Providers: The program was funded by public sources and local financial institutions¹. Challenges faced: Farmers face a negative cash flow period after replanting ('valley of death'). Solution: Farmers received loans with grant component funded by the government (ICR²) that allowed them to bridge the 'valley of death' and to overcome prolonged periods of lower revenues. As a result of this successful financial design, only 7-8% of the loans are in arrears. 	
<p>R&R need</p>  <ul style="list-style-type: none"> Country need: The FNC estimated in 2007 that 300,000 ha of land should be renovated over a period of 5 years (60,000 ha/year). Program objectives: Part of this objective is achieved through the PSF (184,000 ha renovated in 5 years, close to 25% of the total coffee land harvested). 		<p>Knowledge</p> <ul style="list-style-type: none"> Providers: The FNC provided agronomic and business advice to farmers, mostly government-funded³. Challenges faced: The large numbers of farmers targeted are geographically spread and belong to loose value chains. Solution: The FNC implemented a decentralized model to provide TA. It relied on 15 extension divisions at department level and on 97 sectorial offices and a total of 1011 extension officers at district level, who delivered over 6 million of groups or individual interventions between 2010 and 2014. 	
<p>Lessons learned</p> <ul style="list-style-type: none"> Long-term political commitment and coordination is crucial to the success of large scale renovation programs: The PSF program required a long-term commitment and level of coordination between the government, coffee institutions and financial institutions. This model could hardly be replicated in countries with a less organized coffee sector. An important presence in the field is required: Each extension officer had a maximum of 550 farmers under his supervision, allowing for groups or individual interventions, especially at early stages of the program, and thus increasing adoption of best practices and survival rates of plants. The grace period and the loan component are critical to increase farmer willingness and ability to undertake renovation: As farmers were provided grants funded by the government, they were willing to undertake renovation of their land and mostly able to reimburse their loans after the grace period (60% of the loan to pay back). 			

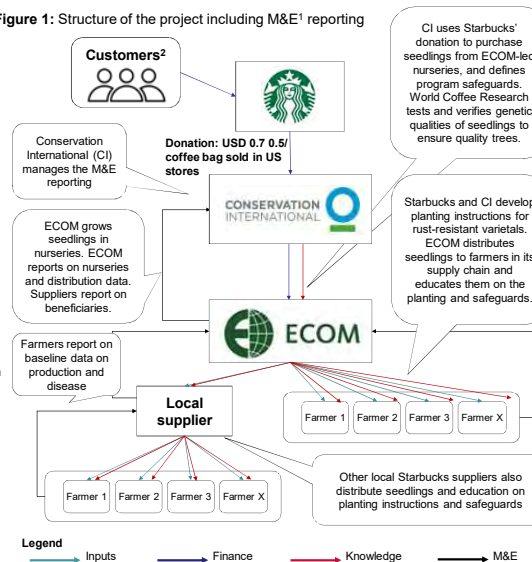
Notes: (1) Funders include the Colombian Ministry of Agriculture, Finagro, Banco Agrario, Banco de Bogotá, Banco Divianda, the National Coffee Fund (FoNC) and Cundinamarca and Cauca Governors. (2) *Incentivo a la Capitalización Rural*. Between 2010 and 2014, the government disbursed USD 359 million in grant funding. 3: The Colombian Government spent USD 97 million for extension services between 2010 and 2014. Source: FNC, *Sostenibilidad en Acción*, 2013; *Risk and Finance in the Coffee Sector*, The World Bank, February 2015, Rabo Bank and ISH, *Rehabilitation & Renovation of crop trees in cocoa, coffee, palm oil*, 2015.

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Case study 5: Starbucks and Conservation International lead a grant-based renovation project with a strong environmental component and innovative consumer connection (1/2)

One Tree for Every Bag Commitment Program (1T1B) - Starbucks	
R&R type	Grant-based renovation
Countries	Mexico, El Salvador, Guatemala
Cost	Total cost: \$19.5 million – USD 0.7 0.5/coffee bag sold
Dates	2015 – 2017
Project context	<ul style="list-style-type: none"> In 2011/12, <i>La Roya</i> affected almost 50% of the total coffee growing area in Mexico and Central America, significantly reducing the SHF production. Starbucks launched the "One Tree for Every Bag Commitment" initiative to help ensure the long term supply of coffee and the economic future of farmers. Farmers supported are C.A.F.E. Practice verified
Objectives, activities, and results	<ul style="list-style-type: none"> Starbucks raised funds through consumers to finance the distribution of nearly 30 million rust-resistant trees in 2017 and extended commitment to 100 million trees by 2025 (with a focus on Mexico, El Salvador, and Guatemala and as part of Starbucks' green buying program) Starbucks aims to ensure that 10 million trees are available per year to farmers in need (in the same three countries) It is still too early to evaluate yield uplifts, but preliminary socioeconomic and environmental results look promising.... Expected value created: yield improvements and greater livelihood security, forest and shading trees preserved, job creation Value captured: Farmers are not required to sell their production to ECOM or to local suppliers. Starbucks may recoup part of its investment through increased production volumes, but the program mostly finances a public good.

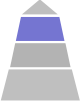

Figure 1: Structure of the project including M&E¹ reporting



Notes: (1) Monitoring and Evaluation. (2) Since its inception, the program has been funded through customer sales in Starbucks stores. Going forward, Starbucks is integrating the purchase of healthy, rust-resistant coffee trees into its green coffee buying program. By working with long-term suppliers, the company will seamlessly ensure that a total of 10 million coffee tree seedlings per year are available to farmers in need. Sources: Sustainable Coffee Challenge, *The Opportunity for Renovation at Scale – Meeting the needs of 1B+ new trees to restore productivity and sustain supply chain*, 2017; Dalberg interviews

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Case study 5: Starbucks and Conservation International lead a grant-based renovation project with a strong environmental component and innovative consumer connection (2/2)

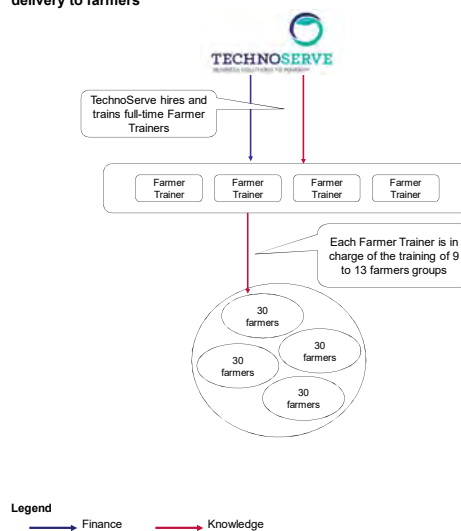
Project context		Management of the three R&R components	
<p>Viability</p> <ul style="list-style-type: none"> Relevance: SHFs in Central America and Mexico have the potential to increase yields by applying GAP and R&R. In addition, R&R can help build adaptive capacity by supporting disease resistance and adaptation to climate change. Willingness: Farmers in the program must adopt "Safeguards". One safeguard concerns the "right of growers": it acknowledges that the decision to renovate a portion of their land was made freely by the farmer him/herself. 		<p>Inputs</p> <ul style="list-style-type: none"> Providers: ECOM Challenges faced: <ul style="list-style-type: none"> Production of rust-resistant seedlings. Physical distribution of seedlings and tracking of plants once distributed in remote areas may be difficult. Solution: <ul style="list-style-type: none"> ECOM germinates seedlings in 12 local nurseries. The seeds produced are rust-resistant (variety <i>Marsellese</i>) and the quality is monitored. Starbucks is planning to support decentralized nurseries to ease distribution, but control of decentralized nurseries is more difficult. 	
<p>Farmer segmentation</p>  <ul style="list-style-type: none"> Country situation: In the three countries, SHFs represent the bulk of coffee farmers. Their degree of integration within value chains varies by country, though most are in tight value chains. Program segmentation: ECOM, or local suppliers, select farmers from their supply chain. A tight link between farmers and suppliers prevents farmers from reselling the distributed seedlings. 		<p>Finance</p> <ul style="list-style-type: none"> Providers: Starbucks is financing the seedlings and currently exploring other loan and financial assistance mechanisms. 	
<p>R&R need</p>  <ul style="list-style-type: none"> Country need: Roughly 75,000 ha cultivated by SHFs would benefit from R&R in Mexico, El Salvador, and Guatemala. Program objectives: Starbucks raised funds to distribute nearly 30 million new trees. ECOM and local suppliers communicate farmers' R&R needs, and CI monitors the tree distribution based on a needs analysis. 		<p>Knowledge</p> <ul style="list-style-type: none"> Providers: Conservation International (CI) Challenges faced: Farmers may use environmentally damaging agricultural practices. Solution: CI establishes "safeguards" concerning forest conservation and shade management. Local suppliers teach farmers to respect these safeguards that are in accordance with C.A.F.E. Practices. Local suppliers also provide technical assistance and education on GAP for the planted variety to SHFs. CI visits a sample of farms annually to ensure safeguards were respected. CI also works closely with Starbucks agronomists to produce detailed planting instructions for farmers to nurture plants in years 1-3. 	
<p>Lessons learned</p> <ul style="list-style-type: none"> M&E is critical to ensure renovation implementation success – A well rounded monitoring system helps ensure that quality trees are being provided, beneficiaries respect environmental safeguards and that the program management, distribution and reach improves year over year. Collaboration and communication between stakeholders enables the successful delivery of diverse project components – Given the scale of the 1T1B program, in order to ensure timely germination of seedlings and to coordinate mass deliveries, Starbucks, CI and all suppliers needed to maintain close coordination, which included the use of standardized data tracking templates and farmer and agronomist outreach materials. Additionally, ensuring the seeds are distributed and planted at the right times is essential and an ongoing consideration that is managed and improved year on year. Environmental safeguards in renovation projects should not be overlooked – Renovation projects can have unanticipated impacts on forest conservation if not properly managed. For example, if farmers cut down old growth or shade trees in addition to replacing non-productive coffee trees, the consequence of deforestation and loss of forest connectivity can lead to deterioration of water resources and biodiversity. Program implementers should include safeguards in the design of their projects and ensure their implementation at farm level. 			
<p><i>For more information, please contact: Starbucks Social Impact Team, socialimpact@starbucks.com; Raina Lang, Director, Sustainable Coffee Markets, CI, rlang@conservation.org</i></p>			

Sources: Sustainable Coffee Challenge. *The Opportunity for Renovation at Scale – Meeting the needs of 1B+ new trees to restore productivity and sustain supply chain, 2017* – Dalberg interviews

Case study 6: Adoption of GAP and rehabilitation programs lead to production uplift in East Africa in spite of ageing trees (1/2)

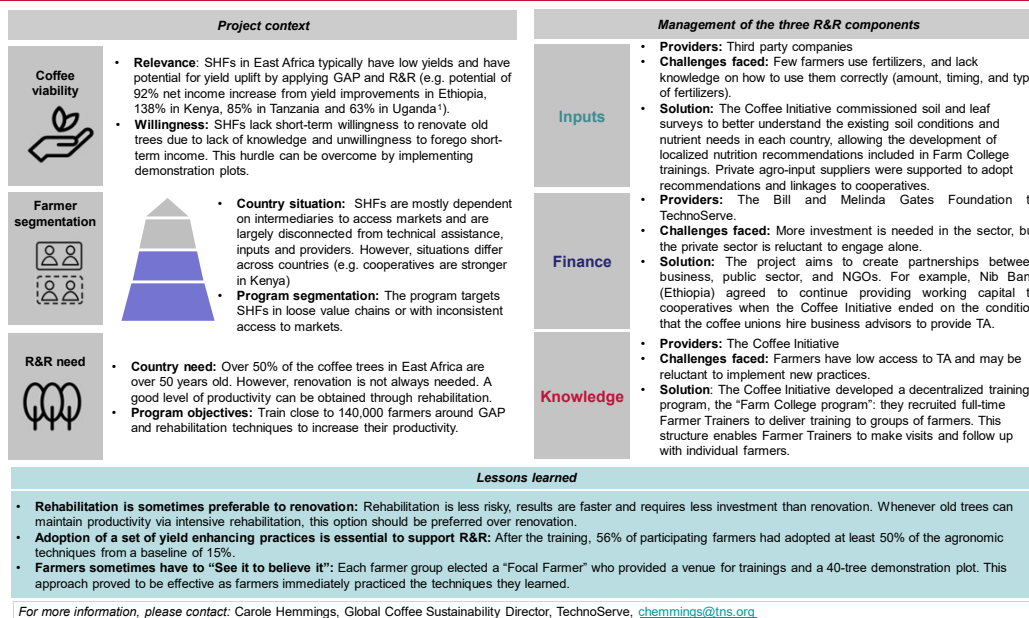
The Coffee Initiative - <i>TechnoServe</i>	
R&R type	Grant-based rehabilitation ¹
Countries	East Africa (Ethiopia, Kenya, Rwanda, Tanzania)
Cost	USD 47 million in 2008 and USD 18 million in 2012 ²
Dates	2008 - 2016
Project context	<ul style="list-style-type: none"> The 5 million SHFs across East Africa have (on average) 50% lower yields than those in Central America. The primary reason is the lack of adoption of Good Agricultural Practices (GAP). Rehabilitation alongside GAP can enable farmers to reach good levels of productivity, even for trees above the productivity peak. Renovation is not always needed. The Coffee Initiative developed the Farm College program. The Coffee Initiative recruited farmer trainers, mostly daughters and sons of local coffee farmers, to deliver training on GAP and on rehabilitation practices to farmers. Each farmer trainer was responsible for training between nine and 13 groups of 30 or more farmers. Every training group selected a member who volunteered his/her land as a demonstration plot. The monthly lessons included sessions on pruning techniques, rejuvenation, pest and disease management, coffee planting, and the safe use of pesticides. In total, 139,609 farmers were trained. Value creation: increased yields of least productive SHFs and improved livelihoods. Value capture: the program finances a public good. The value is yet to be captured by the financiers.
Objectives, activities, and results	

Figure 1: Farm college programs – overview of technical assistance delivery to farmers



Notes: (1) Philanthropic rehabilitation is part of one of the three strategies of the Coffee Initiative. The two other strategies are the assistance of farmers in the establishment of coffee processing stations and the strengthening of the overall value chain to enhance the competitiveness of the East African Specialty coffee. (2) This amount was mobilized for the whole project and not specifically for the rehabilitation program. Sources: *Coffee Initiative Final Report*, TechnoServe – Dalberg interviews

Case study 6: Adoption of GAP and rehabilitation programs lead to production uplift in East Africa in spite of ageing trees (2/2)



Source: (1) TechnoServe and GCP, *Economic Viability of Coffee Farming*, 2017

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Case study 7: A grant funded program in Brazil educates farmers around process-oriented practices, such as rehabilitation, and more sustainable inputs-oriented practices (1/2)

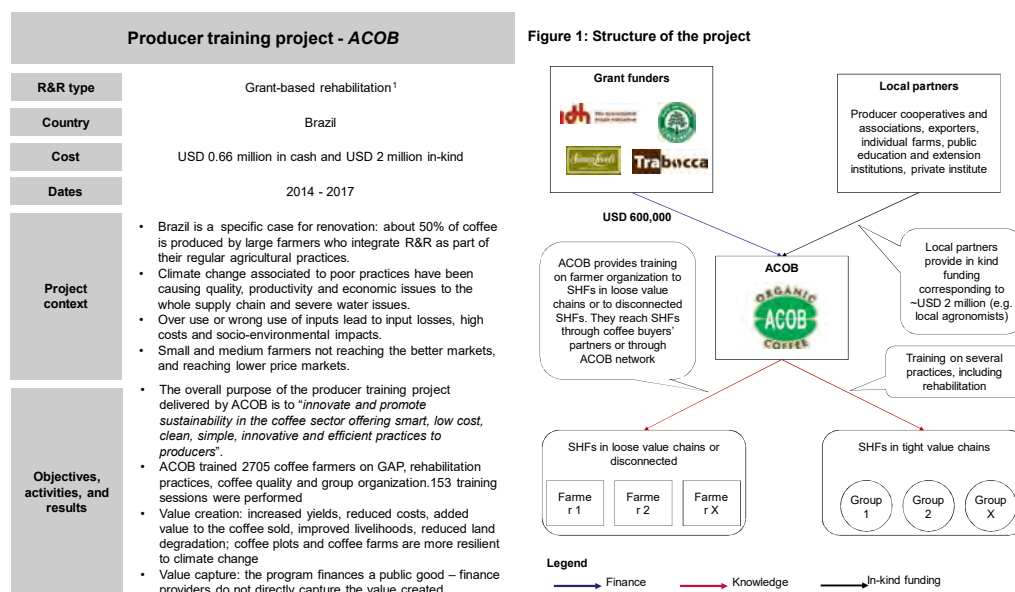
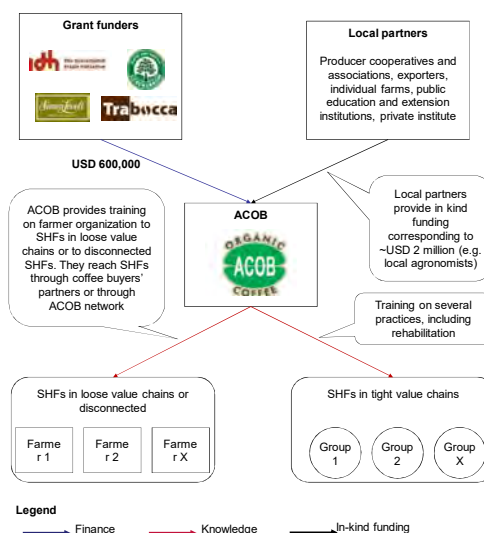






Figure 1: Structure of the project



Notes: (1) Promoting rehabilitation is one of the objectives of the producer training project. Objectives include (i) promote smart and low cost practices to increase yields and sustainability, (ii) increase coffee quality, (iii) implement practices to make coffee more CLIMATE resilient, (iv) support farmer organizations and (v) support women in all the parts of the value chain.
Source: ACOB, *Producer training project*, 2017 – Dalberg interviews

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Case study 7: A grant funded program in Brazil educates farmers around process-oriented practices, such as rehabilitation, and more sustainable inputs-oriented practices (2/2)

Project context		Management of the three R&R components	
<p>Coffee viability</p> 	<ul style="list-style-type: none"> Relevance: The region where the project operates is exposed to climate change but looks to maintain coffee production in the long-run. SHFs could benefit from yield uplift through the adoption of GAP and R&R. Willingness: SHFs are willing to be included in the program as soon as they see economic, or social, results in demonstration plots or at their peers' farms. 	<p>Inputs</p>	<ul style="list-style-type: none"> Providers: The program does not have an input distribution component. Challenges faced: Brazilian farmers can typically access the needed inputs (e.g. fertilizers), but sometimes struggle to use them correctly (amount, timing and type of agrochemicals). Solution: The program teaches SHFs to use process-oriented practices and more sustainable use of input-oriented practices. Pruning, stumping and replanting are part of these practices.
<p>Farmer segmentation</p> 	 <ul style="list-style-type: none"> Country situation: 50% of coffee in Brazil is produced by farmers with land < 8 ha. Whereas large producers are mostly organized, SHFs lack formal organization. Program segmentation: The program targets SHFs in loose value chains, with farm size averaging 5 ha. Disconnected farmers receive training on farmer organization. 	<p>Finance</p>	<ul style="list-style-type: none"> N/A: No finance provided to SHFs
<p>R&R need</p> 	<ul style="list-style-type: none"> Country need: There is no need for large renovation programs in Brazil. Large producers already integrate renovation on a rolling-basis. Small farmers could benefit from production increases if they applied proper rehabilitation practices. Program objectives: Promote sustainable ways to increase production by SHFs, including rehabilitation. 	<p>Knowledge</p>	<ul style="list-style-type: none"> Providers: ACOB and partners Challenges faced: Farmers lack training on smart agricultural practices, on climate & water issues, on coffee quality and on producer organization. Solution: ACOB offers 4 training modules to farmers, under the form of field trainings, group trainings and publications. One of the modules, "Sustainable coffee management" includes education on R&R.
<p>Lessons learned</p> <ul style="list-style-type: none"> Showing real-life example of success helps farmers to engage with new practices: Seeing short-term economic benefits of the new practices helped farmers and their peers to adopt new practices. Program implementers should screen practices leading to short-term economic results and promote them to farmers. Investing in renovation without analyzing the soil and micro-climate conditions is risky: Renovation is advised when rehabilitation can no longer recoup yields. Yet, if trees, soil and environment are mismanaged, positive effects from renovation will not last. ACOB is training farmers on soil and micro-climate management practices to make future renovation investments sustainable. 			
<p>For more information, please contact: Cassio Moreira, cassiofrancomoreira@gmail.com</p>			

Notes: (1) Funders include IDH, Simon Levett, Trabocca and Lebensbaum. Source: ACOB, *Producer training project*, 2017; Dalberg interviews.

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Case study 8: A project focusing on farmer aggregation in Uganda created an enabling environment for future R&R projects (1/2)

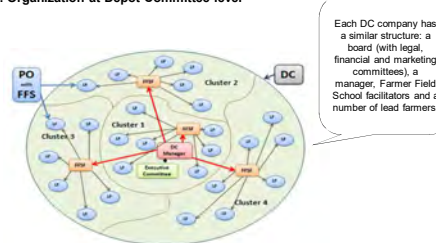
Building Coffee Farmers' Alliances in Uganda - HRNS	
R&R type	Grant-based technical assistance and capacity building
Country	Uganda ¹
Cost	~USD 4 million
Dates	2009 - 2013
Project context	<ul style="list-style-type: none"> Coffee farmers in Uganda typically have low yields, are unorganized, and have weak connections to markets. There is a lack of aggregation points to reach farmers and to implement project activities. The project seeks to improve livelihoods of coffee SHFs through improved coffee production and increased revenues. The first step is to aggregate producers into organized groups. The project aggregated SHFs into two-tiered organizations: <ul style="list-style-type: none"> 570 "Producers Organizations" (PO) at village level; 32 "Depot Committees" (DC) combining 20-30 POs at sub-county level. The project also created the apex organization "Uganda Coffee Farmers Alliance (UCFA)". Its key function is to support the marketing of the coffee bulked by the DCs and facilitating linkages with other service providers (e.g. inputs, technical assistance) These organizations serve as entry points to implement various activities that lead to positive results: <ul style="list-style-type: none"> Yield uplifts (from 1kg per tree per year to 2.5-2.7kg). Quality improvement (adoption of better harvesting and post-harvesting practices) Positive outcomes in gender-related activities (e.g. joint household planning and decision making, equitable access to household resources). Value creation: strengthened SHF capacity, increased yields of least productive SHFs, and improved livelihoods Value capture: the program finances a public good – finance providers do not directly capture the value created.
Objectives, activities, and results	<ul style="list-style-type: none"> Value capture: the program finances a public good – finance providers do not directly capture the value created.

Notes: 1: The project evaluation was limited to two project regions in Uganda: Luwero and Bukomansimbi. All figures mentioned in this case study refer to the evaluation in these two regions. Source: HRNS, *Building Coffee Farmers' Alliances in Uganda Project evaluation*, 2013

Figure 1: Apex organization and two-tiered organizations created through the Building Coffee Farmers' Alliances project







Figure 2: Organization at Depot Committee level



Legend
 DC: Depot Committee
 FFS(F): Farmer Field School (Facilitator) PO: Producer Organization
 LF: Lead Farmers

Case study 8: A project focusing on farmer aggregation in Uganda created an enabling environment for future R&R projects (2/2)

Project context		Management of the three R&R components	
<p>Coffee viability</p>  <ul style="list-style-type: none"> Relevance: SHFs in Uganda are on five times less productive than Vietnamese SHFs. There is an important potential for yield uplift by applying GAP and R&R. Willingness: High competition between traders promotes the trading and sale of poor quality coffee, with few incentives for the farmers to invest in the improvement of the quality of their product. Price premiums for quality would incentivize farmers to invest. 		<p>Inputs</p> <ul style="list-style-type: none"> Providers: HRNS, DCs, POs, third party companies. Challenges faced: Only 34% of SHFs used inputs before the start of project. Solution: Access to inputs, for demonstrations, was a key component of the program. Various activities such as the distribution of free seedlings and fertilizers to farmers holding demonstration plots led to a doubling in the use of inputs by SHFs. 	
<p>Farmer segmentation</p>   <ul style="list-style-type: none"> Country situation: 1.7 million farmers are growing coffee in Uganda, mostly Robusta. They are typically small farmers (average of 200 trees), mostly unorganized and weakly connected to markets. Program segmentation: The program targets disconnected and unorganized farmers. 		<p>Finance</p> <ul style="list-style-type: none"> Providers: Various sources¹ Challenges faced: Farmers, in general, lack access to finance and are not able to cover expenses associated with improved production techniques. Solution: The project supported the formation of several "Village Saving and Loan Associations" by strengthening financial literacy of farmers. A pilot project for commercial lending has been designed by KFW, Opportunity Bank, HRNS, and UCFA. 	
<p>R&R need</p>  <ul style="list-style-type: none"> Country need: Coffee trees in Uganda are on average 50 years old. Most of them would require renovation or intensive rehabilitation alongside with GAP. Program objectives: The program does not focus on R&R <i>per se</i>, but creates farmers structures that can later serve as entry points for R&R implementers. 		<p>Knowledge</p> <ul style="list-style-type: none"> Providers: HRNS, DCs Challenges faced: Lack of managerial and agronomic knowledge at organization and farmer levels. Solution: HRNS has trained DC leadership in managerial capacities (coffee management, book keeping and planning, auditing, market information, etc.) and farmers in good agricultural practices through the establishment of Farmer Field Schools . DCs monitor the ongoing FFS activities. 	
<p>Lessons learned</p> <ul style="list-style-type: none"> Organizing farmers is a prerequisite to be able to implement R&R program - Providing R&R packages to disconnected farmers comes at high cost and with low efficiency. The structures created by HRNS (POs, DCs and UCFA) enable third parties and sector stakeholders to easily reach farmers with their services, paving the way for future R&R programs. They also served as entry points for other structures (e.g. NGOs specialized in health and education). Success largely depends on the ability to provide technical advice to farmer organizations (DCs and POs) - Farmer organizations should have the ability to provide TA and to manage loans to farmers. Currently, DCs have weak management and financial capacities and require more assistance. UCFA has not enough capacity to fully support TA to DCs, and relies heavily on external finance (approx. 75%) This has improved to about 60%. Farmer organizations should provide extension services to farmers on a professional basis - The farmer adoption rate of GAP was, on average, high, but providing extension services on a purely voluntary basis is not sustainable. Farmer organizations need to hire staff specifically dedicated to implementing extension services. <p><i>For more information, please contact:</i> Stefan Cognigni, stefan.cognigni@hrnstiftung.org</p>			

Note: (1) Program funders include the European Union (EU), the Bill and Melinda Gates Foundation, International Coffee Partners (ICP), USAID, Agribusiness Initiative (aBI), Plan Uganda, the Food and Agriculture Organization (FAO), and the Douwe Egberts Foundation (DEF). Funders entered at different stages of the project. Source: HRNS, *Building Coffee Farmers' Alliances in Uganda Project evaluation*, 2013



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USAID Bureau for Food Security
Country Data Sheets for Coffee Renovation and Rehabilitation
November 2017

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November 2017



List of abbreviations

A	Arabica
ABIC	Brazilian Coffee Industry Association
Anacafé	National Coffee Association (Guatemala)
CENTA	Centro Nacional de Técnico Agropecuaria (Extension Service institution, El Salvador)
CIAT	International Center for Tropical Agriculture
CIC	Coffee Industry Corporation (in Papua New Guinea)
FAO	Food and Agriculture Organization
FNC	Federación Nacional de los Cafeteros (Colombia)
FoNC	National Coffee Fund (Colombia)
GAP	Good Agricultural Practices
GCP	Global Coffee Platform
GDP	Gross Domestic Product
Ha	Hectares
HRNS	Hanns R. Neumann Stiftung
ICO	International Coffee Organization
IDB	Inter-American Development Bank
IFC	International Finance Corporation
IHCAFE	Instituto Hondureño del Café (<i>Honduran coffee Institute</i>)
PIAC	Plan Integral de Atención al Café (<i>Integrated Plan for Support to Coffee - Mexico</i>)
PNG	Papua New Guinea
R	Robusta
R&R	Renovation and Rehabilitation
SAGARPA	Mexican Secretary of Agriculture
SHF(s)	Smallholder farmer(s)
SHF org.	Smallholder farmer organization (typically a cooperative)
TA	Technical assistance
TCDF	The Coffee Development Fund (Tanzania)
UCDA	Uganda Coffee Development Authority
USD	United States Dollars
VnSAT	Vietnam Sustainable Agriculture Transformation
WCR	World Coffee Research

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Introduction: Purpose and contents of the R&R country data sheets






















- This document contains information on 19 countries and their smallholder farmer (SHF) need for coffee Renovation and Rehabilitation (R&R)
- The purpose of the document is to give coffee sector stakeholders an overview of how countries' needs and priorities differ, and thereby help identify what type of SHF R&R action is needed where
 - The document focuses on SHFs need for R&R in countries, as larger farmers are more able to self-finance R&R
- The document covers the following countries among the world's 19 biggest coffee producing countries:

– Brazil	– Guatemala	– Papua New Guinea
– Colombia	– Honduras	– Peru
– Costa Rica	– India	– Tanzania
– Côte d'Ivoire*	– Indonesia	– Uganda
– Ecuador*	– Kenya	– Vietnam
– El Salvador	– Mexico	
– Ethiopia	– Nicaragua	
- The two-page country data sheets build on:
 - Desk research using sources such as FAO data and country-specific coffee reports
 - Semi-structured interviews with country experts – either from in-country experts or from experts with previous experience in the country
 - Modelling of need and yield uplift estimates
- The country data sheets were developed between July and November 2017

Notes: (*) We were not able to secure sufficient and reliable information on Côte d'Ivoire, and Ecuador, and have therefore not included profiles on these – however, we include them in total numbers to account for their proportion of need estimates.

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Introduction: How to read the document – the two-page profiles cover six topics relevant to R&R (1/2)

Quick facts	<ul style="list-style-type: none"> • Basic information on size of national coffee production and share of global production, land under coffee, Arabica/Robusta composition 							
R&R need and potential	<ul style="list-style-type: none"> • Drivers of R&R need. We distinguish between four drivers of R&R need, and highlight them with colors on profiles according to their relevance : <table border="0" style="width: 100%; text-align: center;"> <tr> <td> Age of trees</td> <td> Exposure to diseases and pests</td> <td> Climate change (see below)</td> <td> Sub-optimal agricultural practices</td> </tr> </table> • We highlight these icons on each country profile to indicate their significance in a given country: <table border="0" style="width: 100%; text-align: center;"> <tr> <td> Very significant driver of R&R need</td> <td> Significant driver of R&R need</td> <td> Not a significant driver of R&R need</td> </tr> </table> • R&R need: Number of estimated SHF hectares where either renovation or rehabilitation is needed • Uplift potential: Current estimated SHF yields, and estimated production increase associated with R&R¹ 	 Age of trees	 Exposure to diseases and pests	 Climate change (see below)	 Sub-optimal agricultural practices	 Very significant driver of R&R need	 Significant driver of R&R need	 Not a significant driver of R&R need
 Age of trees	 Exposure to diseases and pests	 Climate change (see below)	 Sub-optimal agricultural practices					
 Very significant driver of R&R need	 Significant driver of R&R need	 Not a significant driver of R&R need						
Viability	<ul style="list-style-type: none"> • Potential climate change impact on coffee growing regions based on CIAT/World Coffee Research Climate Suitability Maps for 2050. Note, these maps are not available for all countries and are modelled estimates only. • Other viability factors, such as cost of production, prices paid to producers, and information on competing crops 							

Notes: (1) Yield uplifts mostly rely on estimates in the Global Coffee Platform's country viability study. See: GCP, *The future of coffee: A Quick Scan on Improving the Economic Viability of Coffee Farming*, 2017.

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Introduction: How to read the document – the two-page profiles cover six topics relevant to R&R (1/2)

<p>Farmer segmentation</p>	<ul style="list-style-type: none"> Segmentation of national farmers into each segment of the “farmer pyramid”: <ol style="list-style-type: none"> 1. Large & medium farmers that are well connected to value chains and have access to inputs/finance¹ 2. SHFs in tight value chains, often organized in farmer organizations and with stable links to traders 3. SHFs in loose value chains, with weak links to value chains and low access to inputs/finance 4. Disconnected SHFs, with weak and erratic links to value chain and no access to inputs/finance We highlight each segment of the pyramid to indicate where most farmers are situated <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="text-align: center;">  <p>Most farmers are in this segment</p> </div> <div style="text-align: center;">  <p>Some farmers are in this segment</p> </div> <div style="text-align: center;">  <p>Few farmers are in this segment</p> </div> </div> Average plot size for SHFs and availability of intermediaries (e.g. coops)
<p>Enabling environment</p>	<ul style="list-style-type: none"> High-level information on the political environment for R&R and the availability of inputs, finance, and technical assistance (knowledge)
<p>R&R programs</p>	<ul style="list-style-type: none"> Information on past and/or ongoing R&R programs in country to help stakeholders identify actors with experience on the ground, and/or to find potential partners for future R&R programs

Notes: (1) While we make reference to these types of farmers throughout, they are generally not in focus for R&R efforts since they are largely able to self-finance R&R

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Introduction: A note on data sources and climate suitability maps (1/2)

<p>Data sources and accuracy</p>	
<p>Data sources:</p> <ul style="list-style-type: none"> The main data sources are: <ul style="list-style-type: none"> FAO data for production and land area, 2014¹ and national census data Global Coffee Platform viability studies – for yield potentials for most countries Interviews with country experts – when data was not available, we asked interviewees to confirm estimates on number of SHFs, yield, etc. <p>Data accuracy:</p> <ul style="list-style-type: none"> Country level data points tend to vary significantly between sources and it was not possible to verify the accuracy of all data Where large differences between the same data points exist (e.g. number of farmers in a given country) we have provided a range 	
<p><u>All estimates and conclusions are high-level only and should, whenever possible, be triangulated with more detailed country level analysis</u></p>	

Notes: (1) We have used FAO data to be consistent between land and production – there are more recent data sources available (e.g. ICO production statistics), but they are not as comprehensive as FAO (e.g. ICO does not include land area statistics). Production and land area estimates also come with a degree of uncertainty and should be read as indicative only.

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Introduction: A note on data sources and climate suitability maps (2/2)

Climate suitability maps

This document includes climate suitability maps

The climate suitability maps were developed to provide a global assessment of climate change related risk in potential Arabica production areas. The method was a comparison of the distribution of climate zones in which Arabica is currently produced and their distribution under future climate scenarios. This means that we considered the adaptive range currently available globally, but not a possible expansion of this range by novel technologies or technology transfer from other countries. Adoption of adaptive agricultural practices (e.g. novel varieties, irrigation, or shading) may result in alternative developments of the distribution of coffee in the future. Equally, climate was defined as a multi-decadal average of weather conditions. For many farmers two consecutive years with low harvests may be more decisive even if the decadal average harvest is sufficient.

The maps should be interpreted in their global context. I.e. impacts can be compared between countries and regions, but should not be interpreted down to plot level. The maps are also limited to Arabica and do not consider Robusta species.

Climate suitability maps are courtesy of the International Centre for Tropical Agriculture (CIAT) and World Coffee Research (WCR). For more information on climate suitability maps, please contact Christian Bunn (CIAT) at c.bunn@cgiar.org

How to read the maps:

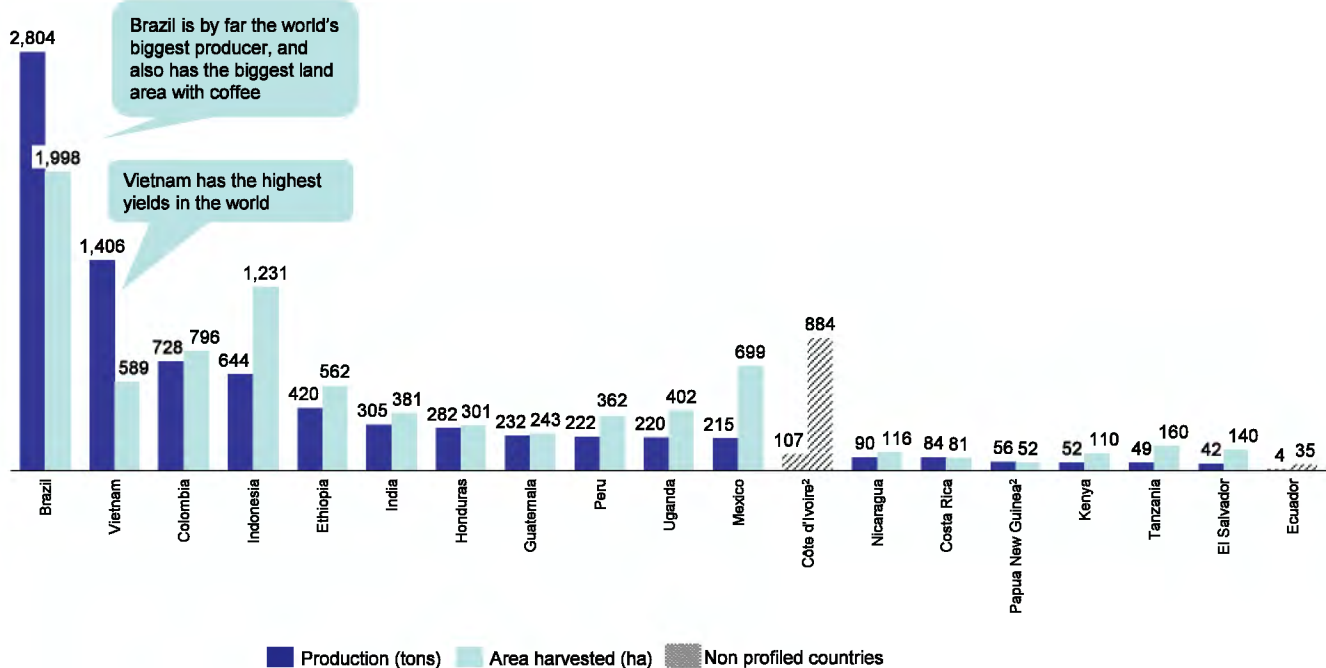
The impact gradient is based on an intermediate business as usual greenhouse gas emissions scenario with a warming well above the Paris goals. The maps differentiate four degrees of climate change:

- Unsuitable sites:** Most likely cannot be used for Arabica coffee production
- Transformation sites:** Alternative tree crops like cocoa or Robusta coffee may be easier to adapt than Arabica at these sites.
- Systemic change sites:** Adaptation to climate change will likely require changes of the production systems, e.g. by using adapted varieties, intercropping etc.
- Incremental change sites:** Adaptation to climate change will likely be possible using incremental changes to the production system, e.g. added shade or improved pest and disease management by use of resistant varieties.

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Summary: This document profiles 17 of the 19 biggest coffee producing nations

Total production and land under coffee – 19 biggest producers¹
000's tons, 000's hectares, 2014



Notes: (1) FAOSTAT, *Crops: Coffee – Production and Area Harvested 2014, 2017*; Note that FAO's most recent numbers are 2014 and we use these throughout the document to maintain consistency. (2) The estimates on Côte d'Ivoire and Papua New Guinea are highly uncertain since the underlying data varies significantly

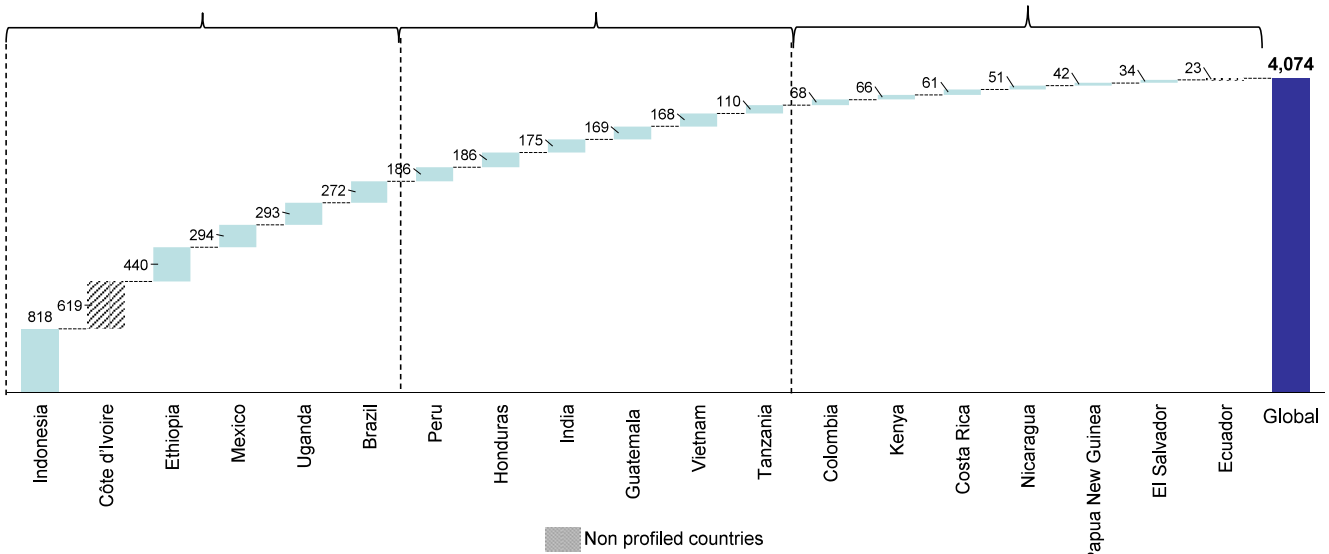
Summary: Indonesia, Côte d'Ivoire, Ethiopia, Mexico, Uganda, and Brazil make up more than half the estimated 4 million global hectares in need of R&R

Estimated land in need of R&R – Globally¹ and per country
000's hectares

High profile countries that each have more than 200,000 hectares in need of R&R. **Collectively account for ~65% of total need**

Medium profile countries that have between 100,000 and 200,000 hectares in need of R&R. **Collectively account for ~25% of total need**

Low profile countries that have between 0 and 100,000 hectares in need of R&R. **Collectively account for ~10% of total need**



Notes: (1) Globally in this case refers to the sum of the 19 countries covered – which collectively cover ~90% of the global land under coffee in 2014 according to FAO data. (2) The estimates on Côte d'Ivoire and Papua New Guinea are highly uncertain since the underlying data varies significantly. Source: Dalberg analysis

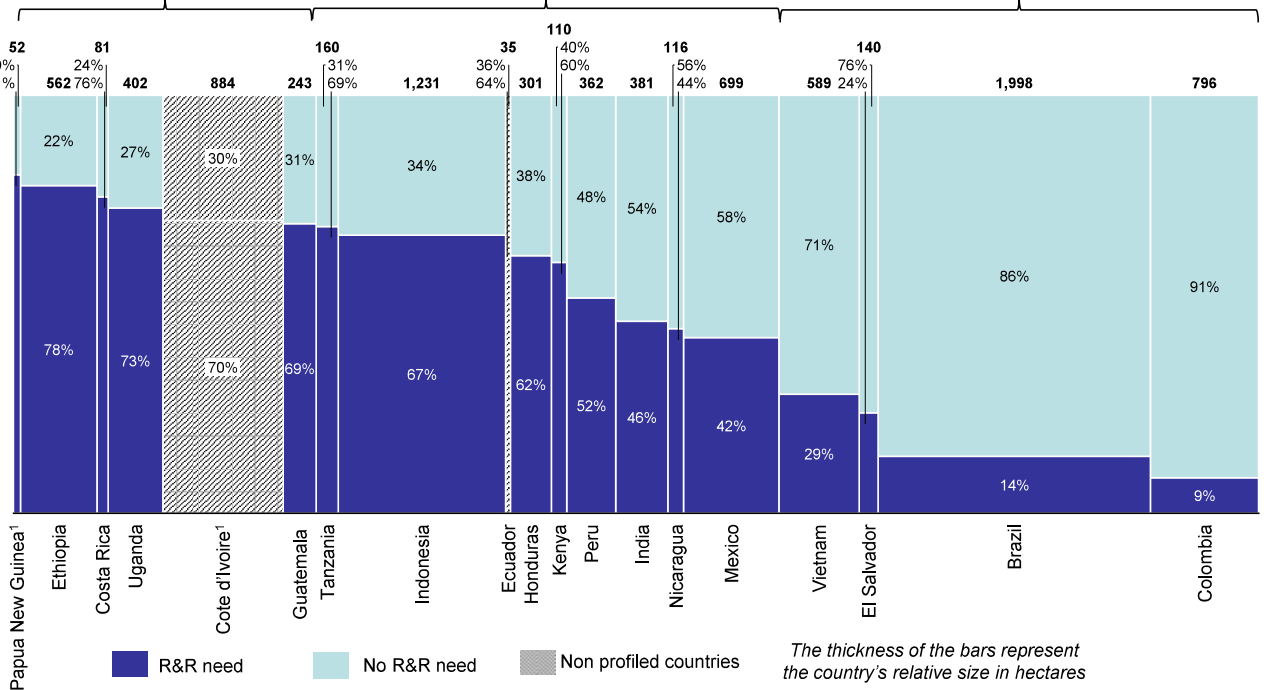
Summary: However, in most countries, the high proportion of SHF need for R&R means over 40% of total coffee land needs R&R...

Estimated proportion of total national land in need of R&R
000's of hectares, % national hectares

Five countries have more than 70% of their land in need of R&R

The following 10 countries still have a minimum of 40% of their land in need of R&R

Vietnam, Colombia, El Salvador, and Brazil have lesser need for R&R

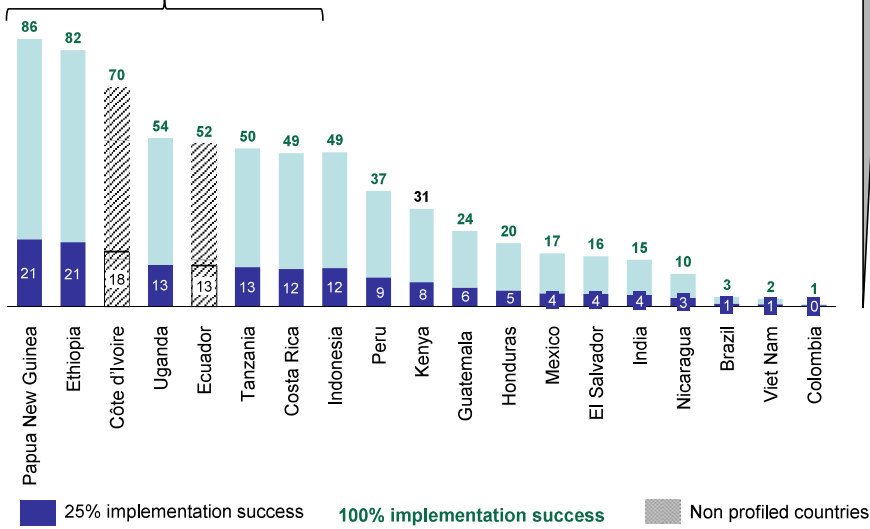


Notes: (1) The estimates on Côte d'Ivoire and Papua New Guinea are highly uncertain since the underlying data varies significantly. Source: Dalberg analysis

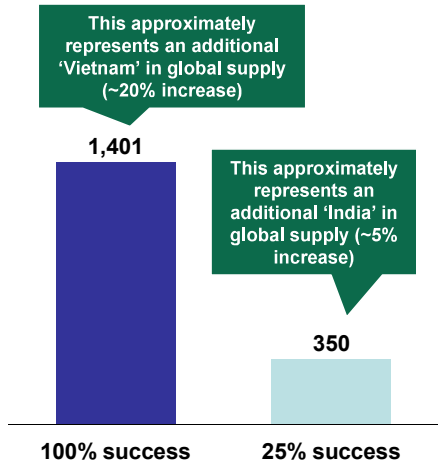
Summary: ...and if R&R is implemented successfully on all land in need, global supply could increase upwards of an additional “Vietnam”

Increase in production from R&R per country – at 25% and 100% success rate¹
% increase in national production

Countries with high need and high proportion of SHFs have the highest potential to significantly expand national supply via R&R



Associated impact on global supply
000's of tons



Notes: (1) These uplifts build on (i) achievable productivity at the national level and (ii) rate of implementation success in R&R programs. The achievable productivity is mostly taken from the GCP studies on economic viability, whereas the 25-100% implementation success rate range illustrates a highly conservative estimate (25% - programs deliver 25% of their potential) and an optimistic estimate (100% - all R&R activities succeed and reach achievable uplift). Note also that these uplifts are conservative national averages and that potential uplifts for specific communities might be much higher. (2) The estimates on Côte d'Ivoire and Papua New Guinea are highly uncertain since the underlying data varies significantly Source: Dalberg analysis

Country profiles

From biggest absolute R&R need to smallest (in hectares)

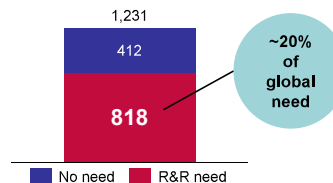
Indonesia represents around 20% of the global need for R&R alone, given its significant size and large SHF base

Quick facts: Indonesia is the world's second biggest Robusta producer

Production '000 tons	Production share Global & region	Coffee land '000 hectares	Varieties Arabica-Robusta
644	4th in world 2nd in Asia	1,231	20% A 80% R

R&R need: ~70% of total land is in need of R&R

SHF land in R&R need out of all land '000 hectares



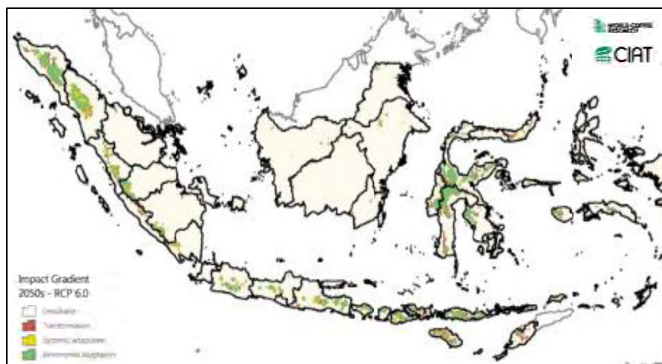
Drivers of R&R need:



R&R need is driven by high age of trees planted in dense areas, and low adoption of good agricultural practices. Most regions in Indonesia are projected to remain suitable for coffee growing in light of climate change

Viability: Long-term viability overall looks favorable

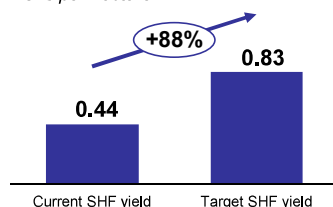
Suitability map



- Most regions in Indonesia are likely to remain suitable for coffee growing in the future, though some regions will need to think of systemic adaptation – especially the main coffee growing region, Sumatra

Uplift potential: Significant potential to increase yield and national supply

Current SHF yield & potential uplift¹ Tons per hectare



Potential increase in supply

~10-50%

Total national supply could increase ~10-50% if R&R and GAP is implemented on all SHF land in need of R&R²

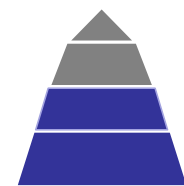
Other viability considerations

- The yield uplift potential is higher for Robusta producers in Sumatra than for other SHFs
- Coffee plantations are heavily exposed to dry weather throughout Southern Sulawesi, Java and Eastern Indonesia

Notes: (1) Average yield is calculated as the total SHF production divided by the total SHF land. The potential yield improvement is estimated by GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; (2) Assuming an 88% yield uplift from R&R and a 25-100% success rate of R&R programs. Source: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; Sustainable Coffee Program, *Indonesia: a business case for the production of sustainable coffee*, 2014; USDA, *Annual Coffee Report*, 2017; Dalberg Interview

Indonesia is characterized by 1.5 million unorganized SHFs and a liberal and unorganized enabling environment

Farmer segmentation: Most SHFs are at the bottom of the pyramid



National production is dominated by SHFs

The majority of SHFs are either in loose value chains or weakly connected value chains, with unstable links to market. SHF organizations are generally mismanaged and lack capacity

SHFs '000 **1,500-2,000** (~7.5-10% of global SHFs¹)

SHF land '000 hectares **1169** (~95% of national land) – average farm size is ~1-1.5 hectares

SHF production '000 tons **515** (~80% of national production)

Assessment of SHF orgs. Most farmers are unorganized and coops have little capacity to manage loans and provide technical assistance (TA)

Links to market Farmers sell their unprocessed coffee to aggregators

Enabling environment for R&R: Liberal and unorganized coffee sector

Political environment



- Coffee share of GDP: N/A [Coffee share of exports: 0.82% (2015)]
- Indonesia has a liberal coffee sector. It is not a strategic priority for the Indonesian government², which mostly supports the sector as part of its commodity export strategy
- SHFs receive some support from the government (e.g. tax exemption on fertilizers)

Availability of inputs



- Only one research institute in Indonesia provides seedlings, but not at commercial volumes
- Some private nurseries provide seedlings, but there is no control over quality
- Low access to nutrition and other inputs

Availability of finance



- SHFs have very limited access to credit from local banks
- Foreign investors experience currency exchange risk when they make loans in local currency

Knowledge availability



- The government does not provide extension services to SHFs
- Some coops provide TA to SHFs, but overall there is limited presence and capacity from coops to provide TA

Examples of R&R programs: Indonesia has been underserved by existing programs to date, and there is need for more engagement

- FAO and the Coffee and Cocoa Research Institute – Nursery Program** (2016-2030): The program encourages Javanese and Balinese female farmers to manage seed nurseries
- Kepahiang government - Peremajan Kopi³** (since 2017): The objective of the program is to renovate 4-5 million trees in the Kepahiang region (Sumatra)

Notes: (1) Assuming a global SHF population of 20 million – estimate on number of farmers is high-level only as numbers vary significantly. (2) The Indonesian government mostly provides support to staple crop sectors, and in particular palm oil. (3) Information on the Peremajan Program is only available in Bahasa and might be incomplete. Source: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; Sustainable Coffee Program, *Indonesia: a business case for the production of sustainable coffee*, 2014; USDA, *Annual Coffee Report*, 2017; Dalberg Interview

Ethiopia is Africa's biggest producer and has significant R&R need, and potential to increase SHF yields and total national output

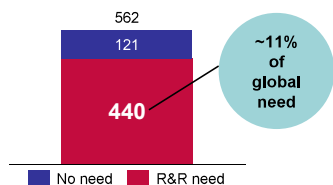


Quick facts: Ethiopia is the biggest African producer

Production '000 tons, 2014	Production share Global & region	Coffee land ¹ '000 hectares, 2014	Varieties Arabica-Robusta
420	5th in world 1st in Africa	562	100% A 0% R

R&R need: ~80% of total land is in need of R&R

SHF land in R&R need out of all land '000 hectares



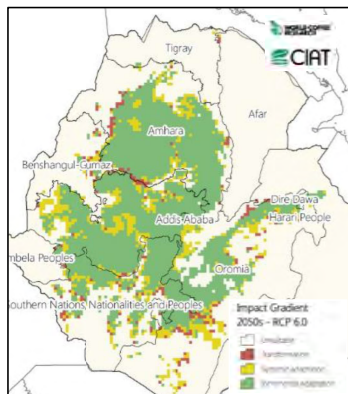
Drivers of R&R need:



Need is primarily driven by old trees (50-70 years in some places) and suboptimal current practices. Climate change is looking to have minimal impact on Ethiopia

Viability: Ethiopia has favorable viability compared to other countries

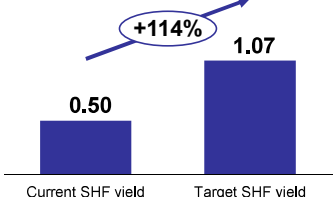
Suitability map



- Most of Ethiopia's land area for Arabica is in incremental change sites and therefore suitable for future production
- Some areas – scattered throughout the country – are systemic change sites

Uplift potential: Significant uplift potential given low current SHF yields

Current SHF yield & potential uplift¹ Tons per hectare



Potential increase in supply

~20-80%

Total national supply could increase ~20-80% if R&R and GAP is implemented on all SHF land in need of R&R²

Other viability considerations

- Farmer share of the export price is around 60% which is lower than other countries. There is potential to increase supply chain efficiency
- Production costs equal ~ USD 190 / ha, compared to ~ USD 500 / ha in Kenya
- *Khat* production (plant chewed by humans for its stimulating effects) is competing with coffee production in many traditional coffee growing areas.
- *Khat* is more drought, disease, and pest resilient than coffee, and can often generate higher income than coffee

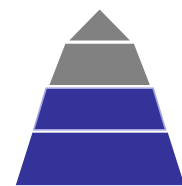
Notes: (1) Average yield is calculated as the total SHF production divided by the total SHF land. The potential yield improvement is estimated by GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 114%, and the range reflects a 25-100% R&R success rate. Sources: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; Government of Ethiopia, *Global Transformation Plan II*, 2015; The world Bank, *Credit constraints and farm productivity: Micro-level evidence from smallholder farmers in Ethiopia*, 2017, Ethiopian Agricultural Transformation Agency, *Annual Report*, 2016; Dalberg interviews

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Ethiopia has the largest SHF population in the world, which is largely unorganized, and faces a relatively weak enabling environment



Farmer segmentation: Most SHFs are at the bottom of the pyramid



National production is dominated by SHFs

The majority of SHFs are either in loose value chains or weakly connected value chains, with unstable links to market. SHF organizations are generally mismanaged and lack capacity

SHFs '000 **2,000- 2,500** - 10% - 12.5% of global SHFs¹

SHF land '000 hectares **550** (~98% of national land) – average farm size ~0.5-2 hectares

SHF production '000 tons **380** (~90% of national production)

Assessment of SHF orgs. Nascent coop sector that gradually improves – ~10% of SHFs are linked to coops

Links to market A majority of SHFs have loose and weak links to market

Enabling environment for R&R: Relatively weak enabling environment

Political environment



- Coffee share of GDP: 1.1% (2011)
- Sector institutionalization is improving (re-establishment of the Coffee and Tea Marketing Authority in 2016, implementation of the Coffee & Tea Research Institute)
- Several encouraging reforms under implementation, including the Growth and Transformation Plan II to increase coffee productivity and double coffee production by 2020², and the reform of the Ethiopian Coffee Exchange to boost exports of specialty coffee

Availability of inputs



- Coffee research stations provide certified seeds, but not at commercial volumes, and distribution is limited to areas nearby
- Privately produced seeds are not controlled and registered and producers complain about high mortality rates of seeds

Availability of finance



- SHFs are highly credit constrained. Roughly 70% of SHFs complain about their inability to access credit, and 14% complain about the high cost of credit

Knowledge availability



- Few SHFs receive TA. Cooperatives usually do not have the financial capacity to finance TA, and public extension services are limited
- Adoption of GAP is extremely low. The Coffee Initiative found a baseline adoption of GAP at 6%, compared to 34% in Kenya and 40% in Rwanda

Examples of R&R programs: Past R&R programs have focused on increasing adoption of GAP and building SHF org. capacity

- **TechnoServe - The Coffee Initiative** (2008-2017): Technoserve trained (via Farmer Field Schools) roughly 80,000 Ethiopian SHFs on GAP and rehabilitation practices

Notes: (1) Assuming a global SHF population of 20 million – estimates for Ethiopian SHFs vary widely; (2) This would bring Ethiopian production at the level of the Brazilian production. This objective is unlikely to be met in such a short timeframe, but it gives positive signals to the coffee sector. Sources: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; Government of Ethiopia, *Global Transformation Plan II*, 2015; The world Bank, *Credit constraints and farm productivity: Micro-level evidence from smallholder farmers in Ethiopia*, 2017, Ethiopian Agricultural Transformation Agency, *Annual Report*, 2016; Dalberg interviews

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Mexico is a major Arabica producer with high R&R need due to ageing trees and exposure to *La Roya*

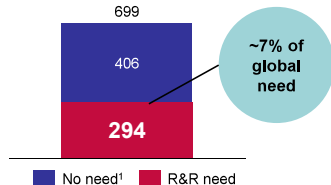


Quick facts: Mexico is an important global producer

Production '000 tons, 2014	Production share Global & region	Coffee land '000 hectares, 2014	Varieties Arabica-Robusta
215	11th in world 1st in North America	699	~ 95% A ~ 5% R

R&R need: ~40% of land is in need of R&R

SHF land in R&R need out of all land '000 hectares

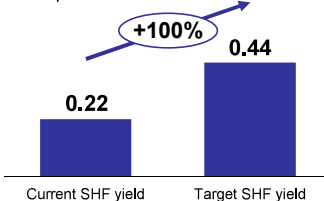


Drivers of R&R need:

Need is driven by the age of trees and exposure to disease (~15% of coffee land was affected by *La Roya*), and to a lesser extent by climate change

Uplift potential: Significant uplift potential given low current SHF yields

Current SHF yield & potential uplift¹ Tons per hectare



Potential increase in supply

~5-15%

Total national supply could increase ~5-15% if R&R and GAP is implemented on all SHF land in need of R&R²

Notes: (1) The current yield is calculated on the basis of SHF production divided by SHF land area, the potential yield uplift is based on an internal estimate based on other mixed countries and current yields. (2) Rounded to the nearest 5%. estimate assumes that R&R and GAP increase yields with 86%, and the range reflects a 25-100% R&R success rate Sources: FAO Statistics database; ICO statistics; Hector Manuel Robles Berlanga, *Los Productores de Café en México: Problemática y Ejercicio del Presupuesto*, Mexican Rural Development Research Reports, 2011; SAGARPA, *Plan Integral de Atención al Café (PIAC)*, 2015; FIRA, *Panorama Agroalimentario*, 2016; Dalberg interviews

Viability: Mexican production is partially exposed to climate change

Suitability map



- Four out of five major coffee producing states, Chiapas, Veracruz, Oaxaca, Guerrero, could be increasingly exposed to climate change risk
- Chiapas is forecasted to be severely affected in low land coffee growing areas

Other viability considerations

- Circa 70% of SHFs are considered poor. Coffee regions suffer from high poverty rates, and are underserved by basic infrastructure
- A minority of SHFs practice intercropping. The majority rely exclusively on coffee
- Most SHFs produce coffee unmechanized

Most Mexican SHFs are not organized in SHF organizations, though several R&R programs have been implemented in the country



Farmer segmentation: Most SHFs are at the bottom of the pyramid

	National production is split between large and medium farmers and SHFs
	More than 85% of farmers are SHFs, but they own less than 50% of the coffee growing areas. They are typically disconnected
# SHFs '000	230 – ~2.5% of global SHFs ¹
SHF land '000 hectares	420 (~60% of national land) – farm size typically ~0.5 hectares
SHF production '000 tons	85 (~40% of national production)
Assessment of SHF orgs.	Coops usually have low capacity to provide TA - ~25% of SHFs are in a coop A majority of SHFs are linked to the market through “coyotes”, lenders that charge extremely high interest rates
Links to market	

Enabling environment for R&R: improving political environment

Political environment



Availability of inputs



Availability of finance



Knowledge availability



- Coffee share of GDP: N/A [Coffee share of exports: 0.1% (2015)]
- Mexico does not have dedicated coffee institutions. The coffee policy is managed by the Secretary of Agriculture (SAGARPA)
- Since 2015, SAGARPA has been leading a significant plan (integrated program for Coffee) to support and reshape the coffee sector. Coffee has become a national priority
- In 2015, SAGARPA led a seed inventory analysis and acknowledged the lack of locally supplied seeds
- PIAC provides support to private nursery and certification institutions, with the purpose of reaching commercial volumes of locally produced seeds
- SHFs are highly credit constrained. In 2011, about 4% of the SHFs had access to credit
- The Trust Fund for Rural Development (FIRA) lends specific credit lines to local finance institutions to increase the volume of loans they provide to SHFs
- Coops have little capacity to provide TA
- SAGARPA works with a network of 400 agronomists who speak indigenous languages and visit SHFs. Yet, coverage of public extension services remain insufficient

Examples of R&R programs: Past R&R programs have focused on renovating areas affected by *La Roya*

- SAGARPA – Integrated Program for Coffee, PIAC** (2015 – 2019) – R&R is one of the PIAC components. PIAC aims to develop certified nurseries to supply producers with quality disease-resistant plants, to renovate coffee plantations, and to provide maintenance and rehabilitation of existing crops
- Root Capital – Coffee Farmer Resilience Initiative** (since 2013): Root Capital lent USD 1.1 million to farmer organizations in Mexico and trained them to deliver loans to their members
- Neumann Kaffee Gruppe – Por Mas Café** (since 2014) – NKG’s exporting company in Mexico partners with a local bank to provide loans for renovation to farmers in its supply chain

Notes: (1) Assuming a global SHF population of 20 million – estimates of farmers are high-level only and vary significantly, Sources: FAO Statistics database; ICO statistics; Hector Manuel Robles Berlanga, *Los Productores de Café en México: Problemática y Ejercicio del Presupuesto*, Mexican Rural Development Research Reports, 2011; SAGARPA, *Plan Integral de Atención al Café (PIAC)*, 2015; FIRA, *Panorama Agroalimentario*, 2016; Dalberg interviews

Uganda is an important global producer with significant uplift potential due to a high need for R&R and low current SHF yields

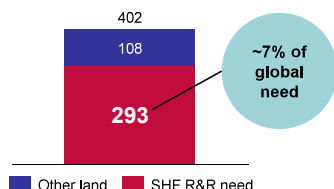


Quick facts: Uganda is Africa's 2nd biggest producer

Production '000 tons, 2014	Production share Global & region	Coffee land '000 hectares, 2014	Varieties Arabica-Robusta
220	10th in world 2nd in Africa	402	~30% A ~70% R

R&R need: ~75% of total land is in need of R&R

SHF land in R&R need out of all land '000 hectares



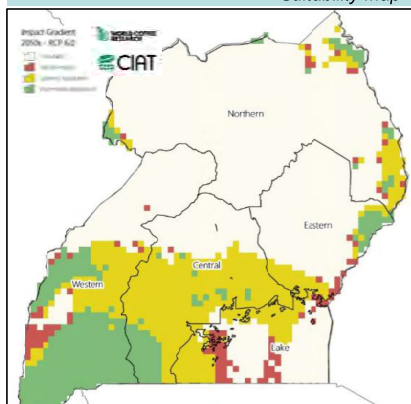
Drivers of R&R need:



Coffee trees in Uganda are on average 50 years old. Most of them would require renovation or intensive rehabilitation alongside with GAP.

Viability: Climate change could significantly impact Arabica

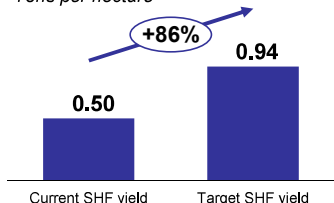
Suitability map



- Arabica production in southern Uganda is looking to be heavily impacted by climate change

Uplift potential: Significant potential for SHFs and national supply

Current SHF yield & potential uplift¹
Tons per hectare



Potential increase in supply

~15-55%

Total national supply could increase ~15-55% if R&R and GAP is implemented on all SHF land in need of R&R²

Other viability considerations

- Coffee is the main cash crop in Uganda, contributing almost a third of foreign export earnings
- There is growing domestic consumption which might increase demand and need for localized processing
- High competition between traders promotes the trading and sale of poor quality coffee, with few incentives for the farmers to invest in improvement of the quality of their product. Price premiums for quality would incentivize farmers to invest

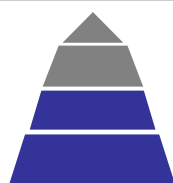
Notes: (1) The current yield is calculated on the basis of SHF production divided by SHF land area, the potential yield uplift comes from the GCP study on Uganda: GCP, *Uganda: GCP: Economic Viability of Coffee farming*, 2017 – this study cites an average SHF yield of 0.625 tons/hectare; (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 86%, and the range reflects a 25-100% R&R success rate. Sources: FAOstat, *Coffee production and land under coffee*, 2014; ICO production statistics; Deloitte, *Uganda Economic Outlook 2016: The story behind the numbers*, 2016

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Uganda is home to a significant share of global SHFs that mostly have loose or weak linkages to market, and availability of R&R components is lacking



Farmer segmentation: Most SHFs are at the bottom of the pyramid



National production is dominated by SHFs

SHFs are predominately in loose value chains or weakly connected value chains, with unstable links to market. There are few (well functioning) aggregation points for farmers

SHFs '000 **1,161-1,700** (~6-9% of global SHFs¹)

SHF land '000 hectares **390** (~95% of national land) – average farm size ~0.2-0.4 ha)

SHF production '000 tons **200** (~90% of national production)

Assessment of SHF orgs. Coops are few and far in between and typically have low capacity

Links to market Sector is dominated by private sector agents and brokers at the aggregator level

Enabling environment for R&R: Though government is supportive, access to R&R components is lacking

Political environment



- Coffee share of GDP: 1.8% (2016)²
- The Uganda Coffee Development Authority (UCDA), the industry regulator, launched a National Coffee Strategy meant to increase export revenue from USD 0.5 B in 2014/15 to USD 2.5 B by 2040

Availability of inputs



- Generally low availability of inputs and SHFs are reported to not apply the correct amount of nutrition to their trees
- UCDA launched a Robusta coffee nursery seedling multiplication program. UCDA worked with 132 private nurseries across 14 districts to improve their performance. The level of success varies by nursery

Availability of finance



- Low availability
- There is little local experience with financing R&R and even finance for inputs and other ongoing production costs are limited for most farmers

Knowledge availability



- Low adoption of GAP and limited current availability of TA
- The Agricultural Sector Strategic Plan aims to train extension service workers across country, but limited funding has been provided so far

Examples of R&R programs: No direct R&R programs were observed, but HRNS has been working on systemic capacity building

- HRNS – Building Coffee Farmers' Alliances in Uganda (2009-2013):** The project sought to improve livelihoods of coffee SHF through improved coffee production and increased revenues. The first step was to aggregate producers into organized groups. The project also created the apex organization "Uganda Coffee Farmers Alliance (UCFA)".

Notes: (1) Assuming a global SHF population of 20 million – estimates of farmers are high-level only and vary significantly; (2) According to UCDA in Daily Monitor, *Low consumption affecting Uganda coffee prices, incomes*, 2016. Source: GCP, *Uganda: GCP: Economic Viability of Coffee farming*, 2017; FAOstat, *Coffee production and land under coffee*, 2014; ICO production statistics; Deloitte, *Uganda Economic Outlook 2016: The story behind the numbers*, 2016

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There is not a strong case for renovation in Brazil, but unmechanized SHFs could benefit from rehabilitation

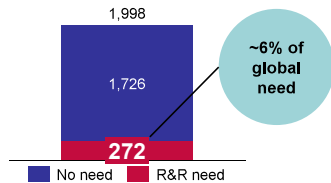


Quick facts: Brazil is the world's largest coffee producer

Production '000 tons	Production share Global & region	Coffee land '000 hectares	Varieties Arabica-Robusta
2,804	1st in world	1,998	90% A 10% R

R&R need: ~20% of total land is in need of R&R

SHF land in R&R need out of all land '000 hectares



Drivers of R&R need:

There is not a significant case for renovation since trees are relatively young. Rehabilitation need is driven by suboptimal practices and climate change

Uplift potential: Low potential uplift given the moderate SHF production

Current SHF yield & potential uplift¹ Tons per hectare



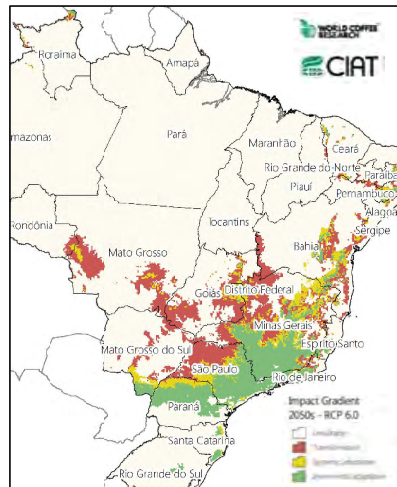
Potential increase in supply

<5%
Total national supply could increase ~1-3% if R&R and GAP is implemented on all SHF land in need of R&R²

Notes: (1) Average yield is calculated as the total SHF production divided by the total SHF land. The potential yield improvement is estimated by GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 30%, and the range reflects a 25-100% R&R success rate. Source: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; USDA, *Annual Coffee Report*, 2017; ACOB, *Producer Training Project*, 2017; Sustainable Coffee Program, *Brazil: a business case for the production of sustainable coffee*, 2014; Ministerio da Agricultura, Pecuaria e Abastecimento, *Public policies and the financing of coffee production in Brazil* (Presentation for the ICO), 2010; Dalberg Interview

Viability: Climate change could significantly impact Brazil

Suitability map



- Brazil could potentially be severely affected by climate change since it has a lot of low-land coffee
- Matto Grosso and Goiás regions are potentially the most exposed
- Coffee in the Southern most part of Brazil looks to be less affected

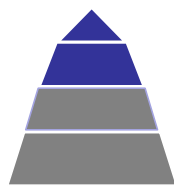
Other viability considerations

- The 30% potential yield increase applies to unmechanized SHFs. Uplift potential is likely to be lower for other SHFs. Unmechanized farms under 10 ha represent ~30% of total farms, mostly concentrated in the Minas Gerais region
- Production costs have increased over the past years
- Preservation of soils and ecosystems, damaged by the intensive use of fertilizers, is a key consideration for future suitability of coffee

Brazil's production is dominated by medium and large producers who implement R&R on a rolling basis



Farmer segmentation: highest number and share of large farms



National production is split between SHFs and large and medium farmers

Brazil has the highest number and share of large and medium farmers in the world. Most of the SHFs are organized into cooperatives or have links to markets through traders.

SHFs '000 **270** – 1.5% of global SHFs

SHF land '000 hectares **1,360** (~70% of national land) – average farm size ~5 hectares

SHF production '000 tons **1,400** (~50% of national production)

Assessment of SHF orgs. Brazil has powerful coops though they are not dedicated solely to SHFs: ~10% of SHFs are linked to coops

Links to market Many SHFs are linked to the market through traders

Enabling environment for R&R: Strong and well performing sector

Political environment



- Coffee share of GDP: 0.35% (2011)
- Coffee sector is a strategic priority for the government. The sector is well organized, including by the well-established Brazilian Coffee Industry Association (ABIC)
- The government has previously subsidized coffee farmers and pushed for an agronomic model based on intensive practices and use of fertilizers

Availability of inputs



- Most of the seedlings are locally produced. Research institutions (sometimes in partnership with private companies) develop rust-resistant varieties
- Seedlings are produced at commercial volumes by private nurseries

Availability of finance



- Credit for R&R in the coffee sector is easily available through several sources (financial institutions¹, rural savings², Funcafe³)
- Observers worry that, in the aftermath of the 2015 economic crisis, subsidies to SHFs may be cut off

Knowledge availability



- Public extension services and private rural extension services are available in Brazil. Some cooperatives provide TA to their members
- Observers complain about the lack of climate adaptation knowledge and the over usage of fertilizers by SHFs

Examples of R&R programs: Past R&R programs mostly focused on climate change mitigation and rehabilitation

- **HRNS – Coffee and Climate** (2010-2019): HRNS provides TA to SHF to adapt to climate change. The program targets several countries, including Brazil
- **ACOB – Producer Training Program** (2014 – 2017): ACOB trained 2705 coffee SHF on climate-suitable practices, including GAP and rehabilitation practices

Notes: (1) Financial institutions must invest 25% of demand deposits in rural credit. These resources are known as "compulsory resources". In 2010, compulsory resources represented more than 50% of rural financing. (2) 65% of the value of rural savings deposits must be kept by financial institutions. (3) Coffee Economy Defense Fund: national coffee trust fund dedicated to the financing of the coffee sector. Source: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; USDA, *Annual Coffee Report*, 2017; ACOB, *Producer Training Project*, 2017; Sustainable Coffee Program, *Brazil: a business case for the production of sustainable coffee*, 2014; Ministerio da Agricultura, Pecuaria e Abastecimento, *Public policies and the financing of coffee production in Brazil* (Presentation for the ICO), 2010; Dalberg Interview

Peru is a major regional producer that has significant uplift potential due to high R&R need in areas affected by *La Roya*

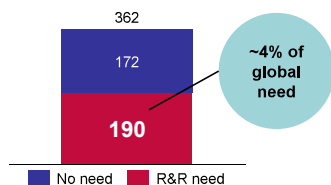


Quick facts: Peru is the 4th biggest Latin American producer

Production '000 tons, 2014	Production share Global & region	Coffee land ¹ '000 hectares, 2014	Varieties Arabica-Robusta
222	9th in world 4th in LA	362	~100% A 0% R

R&R need: ~70% of land is in need of R&R

SHF land in R&R need out of all land '000 hectares



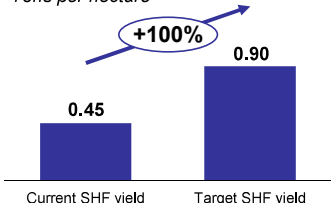
Drivers of R&R need:



Need is primarily driven by old trees and exposure to disease (*La Roya* affected ~50% of coffee growing areas), and to a lesser extent by climate change

Uplift potential: Significant uplift potential given low current SHF yields

Current SHF yield & potential uplift¹ Tons per hectare



Potential increase in supply

~10-40%

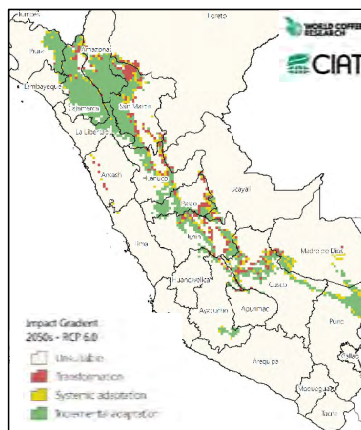
Total national supply could increase ~10-40% if R&R and GAP is implemented on all SHF land in need of R&R²

Notes: (1) The current yield is calculated on the basis of SHF production divided by SHF land area, the potential yield uplift comes from the GCP study on Peru: GCP, *Peru: GCP: Economic Viability of Coffee farming*, 2017; (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 100%, and the range reflects a 25-100% R&R success rate. Sources: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; USDA, *Annual Coffee Report*, 2017; Federación Internacional de Productores Agropecuarios, *Las cooperativas de Café en Perú: experiencias y perspectivas*, 2009; Ministerio de Agricultura y Riego; *Plan Nacional de Renovación de cafetales*, 2014; Dalberg interviews

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Viability: climate change could affect lowest altitudes areas

Suitability map



- Overall, Peru is forecast to be relatively mildly affected by climate change for coffee production
- Coffee growing area in low altitudes are exposed to climate change risk
- Coffee growing areas in the North East look to be hardest affected

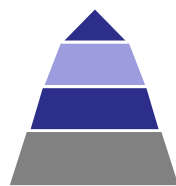
Other viability considerations

- Peru is the world's leading exporter of organic coffee. SHFs, who are mostly unable to pay for fertilizers, are the main producers of organic coffee
- A growing number of SHFs seek out specialized certification schemes to access foreign specialty markets and earn premiums
- The coffee sector generates more than 850,000 jobs in remote and impoverished areas of the country. The government promotes coffee production as an alternative crop to coca leaf cultivation

About 60% of farmers in Peru are SHFs, some of which have benefitted from renovation programs following the *La Roya* outbreak



Farmer segmentation: Production is split



National production is split between SHFs and large and medium farmers

About 59% of farmers are SHFs (30% in tight value chains and a majority in loose value chains). 39% are medium farmers (between 5 and 50 hectares) and 2% hold land larger than 50 hectares

SHFs '000 **132** ~1% of global SHFs¹

SHF land '000 hectares **260** (~70% of national land) – farm size typically ~2 hectares

SHF production '000 tons **110** (~70% of national production)

Assessment of SHF orgs. Coops obtain better prices, improve post-harvest processing and marketing strategies of SHFs – ~30% of SHFs are linked to coops

Links to market Non organized farmers are linked to markets by traders

Enabling environment for R&R: Government support, but capacity for R&R is low

Political environment



- Coffee share of GDP: N/A [Coffee share of exports: 2.6% (2011)]
- The government of Peru has recently defined the coffee sector as a national priority.
- 2013: Implementation of a national renovation program with a USD 70 million budget

Availability of inputs



- The national renovation plan supports development of nurseries
- Seeds produced in private seedling nurseries are controlled and certified by the National Institute of Agricultural Innovation (INIA)

Availability of finance



- SHFs in loose value chains have limited access to finance
- Many SHFs complain about credit terms (8 year tenor, 10% interest rate) from AgroBanco, though these are more favorable compared to local financial institutions

Knowledge availability



- Cooperatives have little capacity and experience in providing high quality TA
- The Junta Nacional del Café acts as a service provider, but has limited field presence

Examples of R&R programs: Past R&R programs have focused on renovating areas affected by *La Roya*

- **Root Capital – Coffee Farmer Resilience Initiative** (since 2013): Root Capital lent USD 2.7 million to farmer organizations in Peru and trained them to deliver loans to their members
- **Government of Peru – Coffee renovation program** (2012-2017): The Peruvian government channeled concessional loans to SHFs to encourage the renovation of 80,000 hectares

Notes: (1) Assuming a global SHF population of 20 million. Sources: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; USDA, *Annual Coffee Report*, 2017; Federación Internacional de Productores Agropecuarios, *Las cooperativas de Café en Perú: experiencias y perspectivas*, 2009; Ministerio de Agricultura y Riego; *Plan Nacional de Renovación de cafetales*, 2014; Dalberg interviews

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Honduras is a major regional producer with significant R&R need due to old trees and a recent *La Roya* outbreak

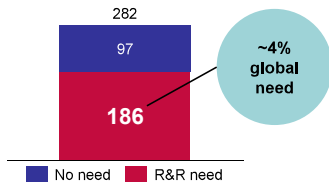


Quick facts: Honduras is the 3rd largest Latin America producer

Production '000 tons	Production share Global & region	Coffee land '000 hectares	Varieties Arabica-Robusta
282	6th in world 3rd in LA	301	100% A 0% R

R&R need: ~70% of total land is in need of R&R

SHF land in R&R need out of all land
'000 hectares



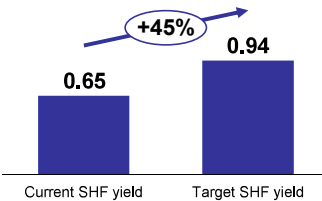
Drivers of R&R need:



Need is primarily driven by old trees and exposure to disease (*La Roya* affected ~25% of coffee growing areas). Climate change also has the potential to negatively affect Honduras – especially in the central region

Uplift potential: Some potential for SHFs, but less impact on total supply

Current SHF yield & potential uplift¹
Tons per hectare



Potential increase in supply

~5-20%

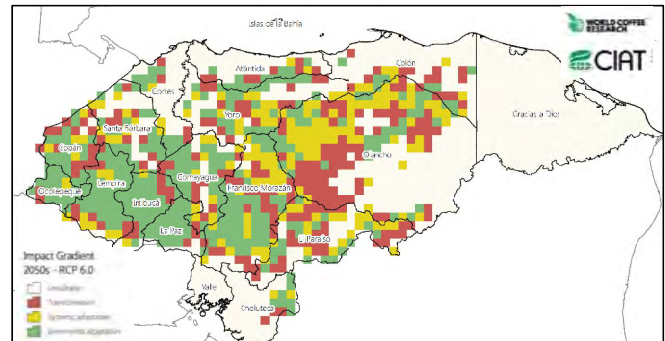
Total national supply could increase ~5-25% if R&R and GAP is implemented on all SHF land in need of R&R²

Notes: (1) The current yield is calculated on the basis of SHF production divided by SHF land area, the potential yield uplift comes from the GCP study on Honduras: GCP, *Honduras: GCP: Economic Viability of Coffee farming*, 2017. (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 45%, and the range reflects a 25-100% R&R success rate. Sources: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; Root Capital, *Learning Report: the CFIR*, 2016; USDA, *Annual Coffee Report*, 2017; IHCAFE, *Programa de Asistencia al Pequeño Productor*, 2017; IHCAFE, *El sector café de Honduras: avances, institucionalidades and desafíos*, 2017; Dalberg Interview

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Viability: Climate change could severely impact Honduras

Suitability map



- The climate change projections indicate that Honduras could be severely affected by increasing temperatures
- Especially in central Honduras, significant portions of land could become unsuitable for Arabica coffee in the future

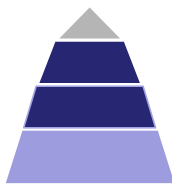
Other viability considerations

- Farmer share of the export price is around 75%, with local intermediaries playing a significant role in the value chain
- Honduras is a growing player in the field of specialty coffee. Honduras could meet part of the high quality Arabica coffee demand, especially for the US market
- Labor cost is on average USD 845/ha, about half the labor cost in Colombia

Honduras' relatively well-organized coffee institutions have led several renovation programs targeting SHFs



SHF segmentation: Most SHFs are in tight and loose value chains



Majority of national production comes from SHFs, though less so than other countries

The majority of SHFs are either in tight or loose value chains. IHCAFE reaches most of the SHFs.

# SHFs '000	96 (includes SHFs <7hectares – 2% of global SHFs ¹)
SHF land '000 hectares	265 (~90% of national land) – farm size typically <3 hectares
SHF production '000 tons	181 (~65% of national production)
Assessment of SHF orgs.	All coops are registered by IHCAFE ¹ ~40% of SHFs are linked to coops. Coops have low capacity to deliver TA.
Links to market	SHFs are registered by IHCAFE

Enabling environment for R&R: Relatively well organized coffee sector

Political environment



- Coffee share of GDP: 3.7% (2012)
- Well organized sector since 2000: privatization of IHCAFE and creation of the regulatory authority (National Council of Coffee, NCC)
- In 2004, a producer savings trust fund was established to help improve farm productivity. The funds are partly used to finance R&R²

Availability of inputs



- IHCAFE produces seeds, but does not have capacity to produce at commercial volumes
- Many farmers produce their own seeds that are typically of low quality
- Seeds may be imported from Nicaragua, but the certification process is slow

Availability of finance



- Low access to commercial bank loans for SHFs
- Several R&R programs enable SHFs to access grants or long-term finance at concessional rates

Knowledge availability



- Coffee institutions provide extension services at national, regional, and district level. However, these public extension services do not currently meet the demand and need of SHFs
- Some cooperatives provide TA, though many do not

Examples of R&R programs: Past R&R programs have focused on providing access to long-term concessional finance for renovation

- IHCAFE – Programa de Apoyo al Pequeño Productor** and **Programa de Emergencia al Pequeño Productor** (since 2007): IHCAFE and the government provided highly concessional loans, technical assistance, and inputs to the least productive SHFs affected by *La Roya* to renovate their lands
- Root Capital – Coffee Farmer Resilience Initiative** (since 2013): Root Capital lent USD 1.5 million to farmer organizations in Honduras and trained them to deliver loans to their members
- Grupo Caldega - Programa de Produccion sostenible de Café** (2015-2020): The purpose of the program is to renovate 1 million trees and to provide TA to 50,000 SHFs

Notes: (1) Instituto Hondureño del Café; (2) The collection mechanism of the coffee producer savings fund is through a tax of USD 13.25/quintal exported. Of this sum, USD 9 is used for the Coffee Trust Fund (Fondo Cafetero Nacional, FNC) to repay the loans helps by banks and used by producers, and to pay IHCAFE for inputs sold to producers. Source: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; Root Capital, *Learning Report: the CFIR*, 2016; USDA, *Annual Coffee Report*, 2017; IHCAFE, *Programa de Asistencia al Pequeño Productor*, 2017; IHCAFE, *El sector café de Honduras: avances, institucionalidades and desafíos*, 2017; Dalberg Interview

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India is a significant global and regional producer, but has less potential for increasing national supply since SHFs drive only 60% of national production

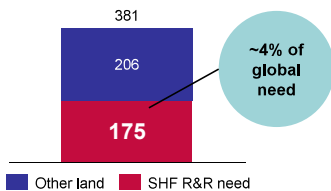


Quick facts: India is Asia's second biggest producer

Production '000 tons, 2014	Production share Global & region	Coffee land '000 hectares, 2014	Varieties Arabica-Robusta
305	7th in world 2nd in Asia	381	~60% A ~40% R

R&R need: ~45% of total land is in need of R&R

SHF land in R&R need out of all land '000 hectares

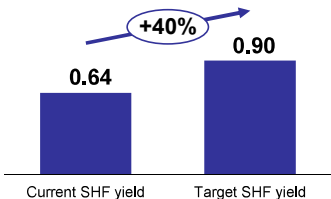


Drivers of R&R need:

- ~50% of trees have passed peak productivity and ~40% of Arabica trees are damaged by White Stem Borer. ~15-20% of low land areas could be at risk of climate change. Bad practices are less of an issue

Uplift potential: Some potential for SHFs, though limited national impact

Current SHF yield & potential uplift¹ Tons per hectare



Potential increase in supply

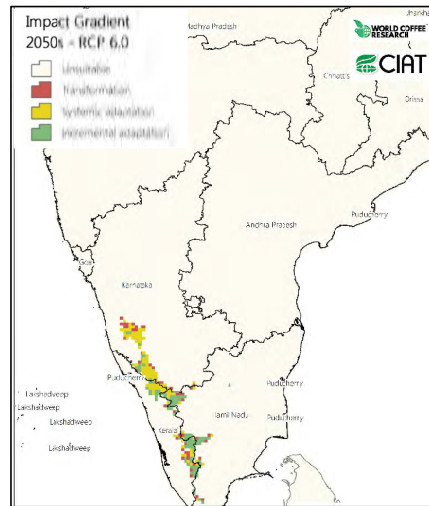
~5-15%

Total national supply could increase ~5-15% if R&R and GAP is implemented on all SHF land in need of R&R²

Notes: (1) The current yield is calculated on the basis of SHF production divided by SHF land area, the potential yield uplift is based on an internal estimate based on other mixed countries and current yields—this study cites an average SHF yield of 0.625 tons/hectare; (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 40%, and the range reflects a 25-100% R&R success rate. Sources: FAOstat, *Coffee production and land under coffee*, 2014; ICO production statistics; USDA, *Coffee Annual: India*, 2017; Indian Coffee Board, *Annual Report*, 2016; Dalberg interviews

Viability: Climate change could impact some areas of India

Suitability map



- Karnataka is the region that looks to be most severely affected by climate change
- There are few areas that are indicated to be in transformative need – but systemic adaptation could be needed in several places

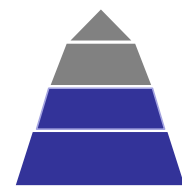
Other viability considerations

- There are no government subsidies for coffee
- Interviews indicated that outlook for Robusta might be better than for Arabica, since Arabica has been badly hit by White Stem Borer disease
- India has started to position itself for speciality coffee markets

Indian SHFs produce the majority of national supply, though they are less dominant here than in other countries



Farmer segmentation: Most SHFs are at the bottom of the pyramid



The majority of national production comes from SHFs, but less so than other countries

SHFs are predominately in loose value chains or disconnected value chains, with weak and erratic links to market. There are few (well functioning) aggregation points for farmers

SHFs '000 **218-520** (~1-2.5% of global SHFs)¹

SHF land '000 hectares **286** (~75% of national land) – average farm size ~1-2 ha)

SHF production '000 tons **183** (~60% of national production)

Assessment of SHF orgs. No aggregation points and SHF orgs. except for non-traditional growing belts

Links to market SHFs typically sell their coffee via middlemen

Enabling environment for R&R: Access to finance is the biggest problem

Political environment



- Coffee share of GDP: N/A [Coffee share of exports: 0.2% (2015)]
- The Coffee Board is implementing the "XII Plan Scheme: Integrated coffee Development Project" (2012-2017) with supportive measures including rainfall insurance for SHFs and subsidies for farm mechanization, though the success of the plan is unclear

Availability of inputs



- There are several private nurseries in India which are owned by farmers themselves, or professional groups, and which meet current demand

Availability of finance



- SHFs are highly credit constrained
- Few SHFs are organized into credit savings groups and thus cannot access microfinance funds

Knowledge availability



- Low adoption of GAP and limited current availability TA
- The Agricultural Sector Strategic Plan aims to train extension service workers across the country, but there is limited funding so far

Examples of R&R programs: Despite its size and significance, few programs have been observed in India

- Indian Coffee Board – Renovation of Traditional Areas** (since 2015): Component of the XII Plan Scheme. The purpose of the program is to renovate more than 3000 hectares of coffee land in traditional coffee growing areas

Notes: (1) Assuming a global SHF population of 20 million – we had two varying estimates on number of SHFs. Sources: FAOstat, *Coffee production and land under coffee*, 2014; ICO production statistics; USDA, *Coffee Annual: India*, 2017; Indian Coffee Board, *Annual Report*, 2016; Dalberg interviews

Guatemala has significant need for R&R since it has not yet recovered from a recent *La Roya* outbreak

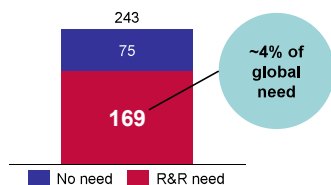


Quick facts: Guatemala is the 5th biggest Latin America producer

Production '000 tons	Production share Global & region	Coffee land '000 hectares	Varieties Arabica-Robusta
232	11th in world 5th in LA	243	90% A 10% R

R&R need: ~70% of total land is in need of R&R

SHF land in R&R need out of all land '000 hectares



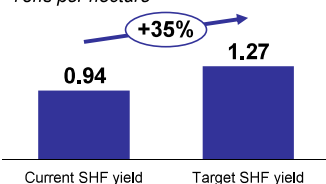
Drivers of R&R need:



Need is primarily driven by old trees and exposure to disease (*La Roya* affected ~70% of coffee growing areas), and to a lesser extent climate change

Uplift potential: Moderate uplift potential on national supply

Current SHF yield & potential uplift¹ Tons per hectare



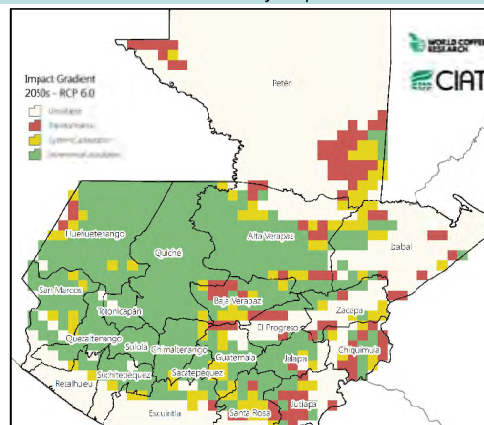
Potential increase in supply

~5-25%

Total national supply could increase ~2-15% if R&R and GAP is implemented on all SHF land in need of R&R²

Viability: Climate change could impact some regions

Suitability map



- The eastern and central parts of Guatemala (especially Petén) could potentially be severely affected by climate change

Other viability considerations

- There are almost no large and medium coffee farmers in Guatemala. They have mostly shifted to more profitable crops
- Relatively little government support, though Anacafé is well positioned to increase SHF incomes

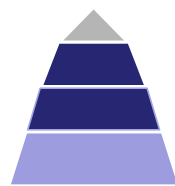
Notes: (1) The current yield is calculated on the basis of SHF production divided by SHF land area, the potential yield uplift is based on an internal estimate based on other mixed countries and current yields. (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 51%, and the range reflects a 25-100% R&R success rate. Sources: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; USDA, *Annual Coffee Report*, 2017; FNC, *Sostenibilidad en Accion*, 2013; Santiago Silva Restrepo; *Evaluación de impacto de los progresos de renovación de cafetales 2007-11, 2012*; *Risk and Finance in the Coffee Sector*, The World Bank, February 2015; Dalberg Interview

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Several renovation programs have attempted to help Guatemalan SHFs recover from *La Roya*



SHF segmentation: Most SHFs are in tight & loose value chains



National production is dominated by SHFs

The majority of SHFs are either in tight or loose value chains. Most farmers groups do not have capacity to provide TA and finance to their members

SHFs '000 **122** (includes SHFs <7hectares – ~1% of global SHFs¹)

SHF land '000 hectares **240** (~100% of national land) – average farm size typically ~2 hectares

SHF production '000 tons **227** (~98% of national production)

Assessment of SHF orgs. ~70% of SHFs are linked to coops or loosely organized groups

Links to market A majority of SHFs are linked to the market through *coyotes*, 'loan sharks' that charge extremely high interest rates

Enabling environment for R&R: SHFs lack access to finance

Political environment



- Coffee share of GDP: 1.6% (2013)
- The National Coffee Association (Anacafé) advises the Government on coffee policies for production and commercialization
- In 2014, the government created the "Trust for financial support for producers in the coffee sector" (the Trust Fund) with assets of USD 100 million dedicated to supporting farmers affected by *La Roya*. To date, about 40% of the fund has not been disbursed

Availability of inputs



- Anacafé produces seeds (including the rust resistant variety Anacafé 14), but there is a lack of production at commercial volumes
- Many SHFs produce their own seeds, but these typically have low quality
- Seeds may be imported from Nicaragua, but the certification process is slow.

Availability of finance



- Low access to commercial bank loans for SHFs
- The Trust Fund has not yet been fully disbursed to SHFs

Knowledge availability



- Some coops provide TA, but coops generally have little capacity to deliver TA
- The Coffee Board does not prioritize the TA budget, and cuts it in case of crisis

Examples of R&R programs: Following *La Roya*, programs mostly focused on renovation of affected areas

- Anacafé and USAID – Rural Value Chains project** (2012 - 2017) – Anacafé provided supported to farmer organizations to perform R&R. 129 organizations benefited from the project, over 3,000 hectares were renovated, and yields increased by over 60%
- World Coffee Research – Seed Verification program** (2016 – 2020) – WCR partners with local nurseries to develop genetic control of seeds
- Starbucks - One Tree One Bag** (2016-2018) – For each bag of coffee sold, Starbucks gives USD 0.70 to seed distribution to areas affected by *La Roya* in Guatemala, El Salvador and Mexico
- Catholic Service Relief – Café Verde project** (2014 - 2016) - The project helped 765 SHFs to renovate old coffee plants susceptible to coffee rust

Notes: (1) Assuming a global SHF population of 20 million. Source: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; Root Capital, *Learning Report: the CFIR*, 2016; USDA, *Annual Coffee Report*, 2017; IHCAFE, *Programa de Asistencia al Pequeño Productor*, 2017; IHCAFE, *El sector café de Honduras: avances, institucionalidades and desafíos*, 2017; Dalberg Interview

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Vietnam is the world's most productive coffee producing nation and has little need for R&R given its strong sector institutions

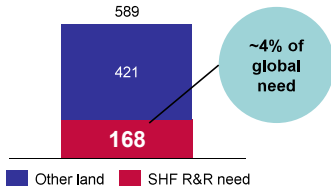


Quick facts: Vietnam is the world's second biggest producer

Production '000 tons, 2014	Production share Global & region	Coffee land '000 hectares, 2014	Varieties Arabica-Robusta
1,406	2nd in world 1st in Asia	589	~10% A ~90% R

R&R need: ~30% of total land is in need of R&R

SHF land in R&R need out of all land '000 hectares

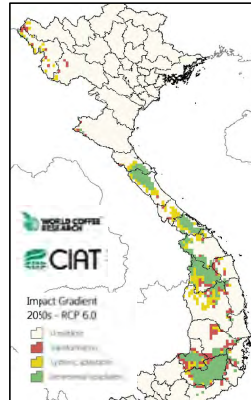


Drivers of R&R need:

The primary threat to Vietnamese trees are pests such as Nematodes. Trees are relatively young given a recent/ongoing national renovation effort. Farmers generally make use of GAP.

Viability: Continued high viability of coffee in Vietnam

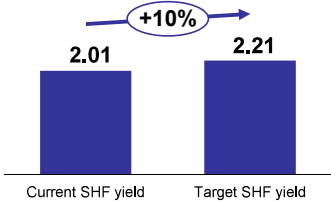
Suitability map



- Arabica production in Vietnam could potentially be affected by Climate change – especially in the areas in the South and West of the country
- However, Arabica is currently only making up 10% of total production, why national supply is likely to be less affected

Uplift potential: Vietnam already has high yields

Current SHF yield & potential uplift¹ Tons per hectare



Potential increase in supply

<5%

Total national supply could increase ~1-2% if R&R and GAP is implemented on all SHF land in need of R&R²

Other viability considerations

- ~90% of farmers have coffee as their main crop – less than 10% are intercropping
- Increase in intercropping with pepper since price of pepper is increasing, which gives an increased incentive to grow pepper when coffee is aged
- There is strong government support for coffee in Vietnam, and coffee production has reduced tax burden to help make the sector grow
- Farmers receive a high portion of the export price, with farmer share around 95%, making Vietnam the most cost-efficient coffee supply chain in the world³

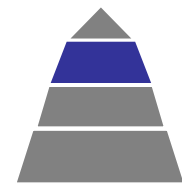
Notes: (1) The current yield is calculated on the basis of SHF production divided by SHF land area, the potential yield uplift comes from the GCP study on Vietnam: GCP, Vietnam: GCP: Economic Viability of Coffee farming, 2017; (2) Estimate assumes that R&R and GAP increase yields with 10%, and the range reflects a 25-100% R&R success rate; (3) See the GCP source listed in (1) for more detail on this. Sources: FAOstat, Coffee production and land under coffee, 2014; ICO production statistics; Dalberg interviews

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Vietnam is dominated by some of the world's most productive SHFs with stable links to market and good availability of inputs



Farmer segmentation: SHFs have strong links to market



National production is dominated by SHFs

The vast majority of SHFs are in tight value chains with close and stable links to market. There is a high degree of competition among collectors and exporters creating stable links for SHFs

SHFs '000 **570** (other estimates as high as 800k) - 3-4% of global SHFs¹

SHF land '000 hectares **560** (~95% of national land – average farm size: ~ 1 hectare)

SHF production '000 tons **1,125** (~80% of national production)

Assessment of SHF orgs. Only 10% of SHFs are organized in coops, which have not been successful so far

Links to market Strong links to market through a competitive sector

Enabling environment for R&R: Strong, but access to finance could be improved

Political environment



- Coffee share of GDP: ~3% (2013)
- Government has been, and is, supportive of R&R efforts, having covered extensive TA programs for replanting and financing for replanting

Availability of inputs



- Government is increasingly involved in ensuring quality and verification of seedlings of local nurseries
- There is a high availability of inputs, though some farmers reportedly tend to over-fertilizer their land

Availability of finance



- Limited access to finance for most SHFs – commercial banks have little interest
- Collectors can provide access to finance, but do so at high interest rates and require SHFs to commit future sales
- Government has financed R&R

Knowledge availability



- Farmers already make use of GAP, though there is potential for cost savings from correct application of fertilizer and irrigation systems

Examples of R&R programs: The Vietnamese government is the main actor in supporting farmers

- **Government of Vietnam and world Bank - vNSAT – Rejuvenation in the Central Highlands (2014-2020):** Government led program, supported by the world Bank, to replant 90,000 hectares and transplant 30,000 hectares in 5 regions in the Central Highlands. The cost of the project is estimated at USD 314 million.
- **Nestlé – Coffee replanting (2013):** Nestlé partnered with the Western Highlands Agro-Forestry Scientific and Technical Institute (WASI) to distribute free seedlings to replant 270 hectares

Notes: (1) Assuming a global SHF population of 20 million; (2) The sector was previously controlled by a national (monopolistic) coffee cooperative. Sources: FAOstat, Coffee production and land under coffee, 2014; ICO production statistics; Dalberg interviews

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Tanzania is an important regional producer with significant R&R need and yield uplift potential due to old trees and low adoption of GAP

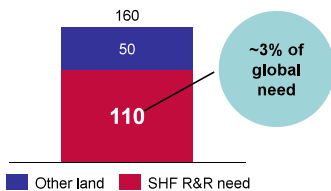


Quick facts: Tanzania is Africa's fourth biggest producer

Production '000 tons, 2014	Production share Global & region	Coffee land '000 hectares, 2014	Varieties Arabica-Robusta
49	16th in world 4th in Africa	160	~50-60% A ~40-50% R

R&R need: ~70% of total land is in need of R&R

SHF land in R&R need out of all land '000 hectares

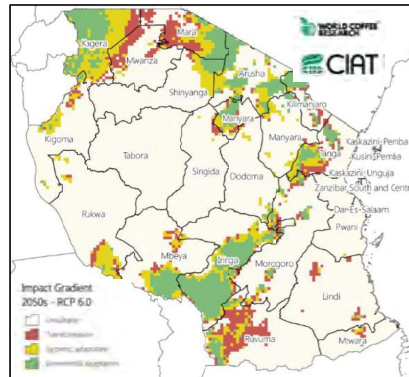


Drivers of R&R need:

- Old trees (50-70 years in some places) and bad current practices, and to a lesser extent disease exposure/

Viability: Tanzania has low production costs, but high taxes

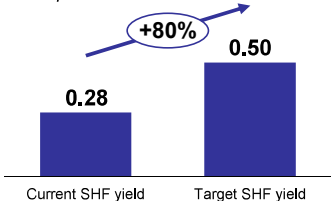
Suitability map: Arabica could be badly affected in particular regions



- Arabica in Mwanza, Mara, and Ruvuma provinces could be badly affected by climate change and become unsuitable for production in the future
- Areas in Kagera and Rukwa might be more suitable for other crops

Uplift potential: Significant uplift potential given low current SHF yields

Current SHF yield & potential uplift¹ Tons per hectare



Potential increase in supply

~15-50%
Total national supply could increase ~15-50% if R&R and GAP is implemented on all SHF land in need of R&R²

Other viability considerations: There is room for improved viability

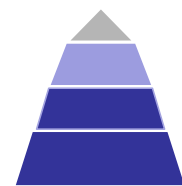
- Farmer share of the export price is low at 55-60% compared to estates and other countries where farmers are more closely linked to value chains
- Taxes are relatively high at 10-20% which could decrease further investment in sector
- Uplift potential is biggest for Arabica farmers, though Robusta farmers also have opportunities to improve
- Cost of production at farm level is low and has been fairly stable over past years

Notes: (1) The current yield is calculated on the basis of SHF production divided by SHF land area, the potential yield uplift comes from the GCP study on Tanzania: GCP, Tanzania: GCP: Economic Viability of Coffee farming, 2017; (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 80%, and the range reflects a 25-100% R&R success rate. Sources: FAOstat, Coffee production and land under coffee, 2014; ICO production statistics; GCP, African coffee sector: Addressing national investment agendas on a continental scale: Tanzania case study, 2016; USDA, Annual Coffee report, 2016; Dalberg interviews

Tanzania has a high number of small SHFs that lack access to R&R components, and the cooperative sector is still nascent, with low capacity



Farmer segmentation: Most SHFs are at the bottom of the pyramid



National production is dominated by SHFs
The majority of SHFs are either in loose value chains or weakly connected value chains, with unstable links to market. SHF orgs. are generally mismanaged and lack capacity

# SHFs '000	400 (2% of global SHFs ¹)
SHF land '000 hectares	150 (~90% of national land) – farm size typically <3 hectares (and even <1 hectare))
SHF production '000 tons	45 (~90% of national production)
Assessment of SHF orgs.	Nascent coop sector that has historically underperformed – ~50% of SHFs are linked to coops
Links to market	SHFs have loose and weak links to market

Enabling environment for R&R: Relatively weak enabling environment

- Political environment**
 - Coffee share of GDP: <1%
 - Government plan (CIDS) to increase national production to 100,000 tonnes by 2020
 - There are encouraging new investments from estates and other sector companies to support SHFs
- Availability of inputs**
 - Insufficient number of functioning nurseries and there is a lack of production of seeds at commercial volumes.
 - Farmers generally have low access to inputs
 - The Coffee Development Fund (TCDF). Its main objective is to ease access to inputs to SHFs by funding R&D, extension service program, and improved planting material
- Availability of finance**
 - Given that coops are still developing,² there is little experience within local financial institutions with lending to coops, though this might increase in the future
- Knowledge availability**
 - Lack of local extension service staff is a problem given the large geographical distribution of coffee production
 - Efforts are in place to publish a standardized 'coffee curriculum' on GAP for all extension service workers, though implementation funding is lacking

Examples of R&R programs: Past R&R programs have focused on increasing adoption of GAP and building SHF organization capacity

- Gates Foundation – The Coffee Partnership of Tanzania** (since 2012): The program provides training on farmer group formation and GAP, but does not include an integrated R&R package with planting material and finance
- Technoserve – Coffee initiative (2008-2017)**: Focus on training farmers to increase GAP, including rehabilitation techniques. The program has reached more than 250,000 SHFs across Ethiopia, Kenya, Rwanda, and Tanzania
- HRNS – Tanzania Program (2016-2019)**: The program focuses on increasing coffee production for 25,000 farmers in Northern Tanzania via better practices, and building commercial farmer organizations

Notes: (1) Assuming a global SHF population of 20 million – other estimates cite 2.4 million farmers in Tanzania, though this might include families relying on income from coffee. We have included the number in the range of 2-12%; (2) The sector was previously controlled by a national (monopolistic) coffee cooperative. Sources: GCP, Tanzania: GCP: Economic Viability of Coffee farming, 2017, FAOstat, Coffee production and land under coffee, 2014; GCP, African coffee sector: Addressing national investment agendas on a continental scale: Tanzania case study, 2016; USDA, Annual Coffee report, 2016; Dalberg interviews

R&R need in Colombia is low, since national replanting programs have already revitalized the tree stock, and current yields are high

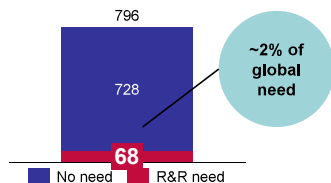


Quick facts: Colombia is the world's 2nd largest producer

Production '000 tons	Production share Global & region	Coffee land '000 hectares	Varieties Arabica-Robusta
728	3rd in world 2nd in LA	796	100% A 0% R

R&R need: <10% of total land is in need of R&R

SHF land in R&R need out of all land '000 hectares



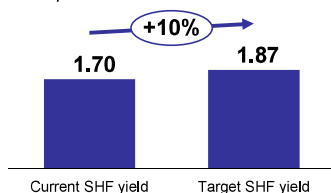
Drivers of R&R need:



Most of the diseased and aged trees were successfully renovated. There is not a strong case for R&R in Colombia

Uplift potential: Low uplift potential given high current SHF yields

Current SHF yield & potential uplift¹ Tons per hectare



Potential increase in supply

~0-1%

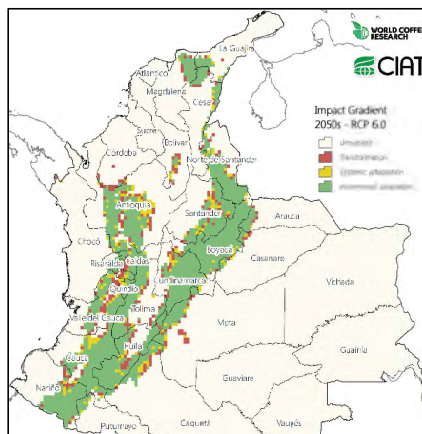
Total national supply could increase ~0-0.5% if R&R and GAP is implemented on all SHF land in need of R&R²

Notes: (1) The current yield is calculated on the basis of SHF production divided by SHF land area, the potential yield uplift comes from the GCP study on Colombia: GCP, *Colombia: GCP: Economic Viability of Coffee farming*, 2017 - The study estimates a potential 20% yield uplift reached through fertilization, pest and shade management and targeted rejuvenation. We use a 10% yield estimate for this study since we do not account for irrigation; (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 10%, and the range reflects a 25-100% R&R success rate. Sources: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; Root Capital, *Learning Report: the CFIR*, 2016; USDA, *Annual Coffee Report*, 2017; IHCAFE, *Programa de Asistencia al Pequeño Productor*, 2017; IHCAFE, *El sector café de Honduras: avances, institucionalidades y desafíos*, 2017; Dalberg Interview

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Viability: Relatively minor impact from climate change

Suitability map



- Climate change is forecast to have minor impact on Colombia
- Given its topography, there may be opportunities to move coffee plantations to higher altitudes if needed
- The lowest lying areas are the ones forecast to be hardest hit by climate change

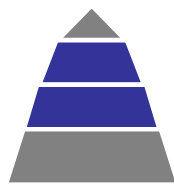
Other viability considerations

- Farmer share of export price is high at 85-90%
- Colombia coffee production performs at record levels not seen since the 1990's, creating overall confidence in the sector. This high level of production could be maintained given that 74% of production is planted with rust resistant varieties, compared to 35% in 2010
- The Colombian specialty coffee market is booming, increasing the value added for producers

Colombia's successful renovation programs were supported by strong coffee institutions



Farmer segmentation: Most SHFs are in tight and loose value chains



National production is dominated by SHFs

The majority of SHFs are either in tight or loose value chains. The national coffee federation (FNC) has strong linkages with SHFs

SHFs '000 **535** - ~3% of global SHFs¹

SHF land '000 hectares **676** (~85% of national land) - average farm size ~1-2 hectares

SHF production '000 tons **503** (~70% of national production)

Assessment of SHF orgs. The FNC has a network of 34 cooperatives that deliver TA to their members

Links to market Many SHFs are linked to market through the FNC's network of 530 buying stations

Enabling environment for R&R: Well organized sector and supportive policies

Political environment



- Coffee share of GDP: N/A [Coffee share of exports: 7.2% (2015)]
- Coffee institutions (FNC, Coffee Fund) are strong and well organized
- Strong involvement of the Colombian government in renovation programs since the late 1990s. The Government and the FNC signed the "Coffee Prosperity Accord 2010-15" in 2009 and established an ambitious renovation program

Availability of inputs



- Cenicafe¹ leads research on varietal development, and has developed several rust-resistant varieties
- Since 2011, Cenicafe has been providing seeds at commercial volumes². Cenicafe also established a network of private nurseries to ensure a sufficient supply

Availability of finance



- SHFs have access to long term loans for R&R
- Public actors and local financial institutions such as the Colombian Ministry of Agriculture, Finagro, Banco de Bogotá, the National Coffee Fund (FoNC) provide finance to SHFs for renovation

Knowledge availability



- Coffee institutions provide extension services at national, regional and district level. However, these public extension services do not meet the demand and need of the SHFs
- Some cooperatives provide TA

Examples of R&R programs: Past R&R programs successfully met most of the R&R need

- FNC and the Colombian Government - Competitiveness³ and Permanency, Sustainability and Future (PSF) programs (late 1990s and 2009 - 2013): Through these two programs, more than 300,000 ha of land were renovated, both for SHFs and medium farmers.

Notes: (1) The Centre of Coffee Research was established in 1937 by the FNC, and has since remained under the management of the FNC; (2) Variety *Castillo*, rust resistant, (3) The Competitiveness Program (*Competitividad*) targeted large and medium scale producers. Source: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; USDA, *Annual Coffee Report*, 2017; FNC, *Sostenibilidad en Accion*, 2013; Santiago Silva Restrepo; *Evaluacion de impacto de los progresos de renovacion de cafetales 2007-11*, 2012; *Risk and Finance in the Coffee Sector*, The world Bank, February 2015; Dalberg Interview

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Kenya is a relatively small global producer with significant need for R&R driven by suboptimal practices and high age of trees

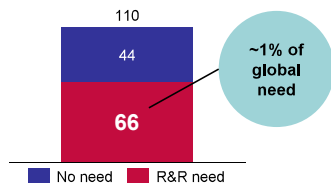


Quick facts: Kenya is a significant regional producer

Production '000 tons	Production share Global & region	Coffee land '000 hectares	Varieties Arabica-Robusta
52	18th in world 5th in Africa	110	100% A 0% R

R&R need: ~60% of total land is in need of R&R

SHF land in R&R need out of all land '000 hectares



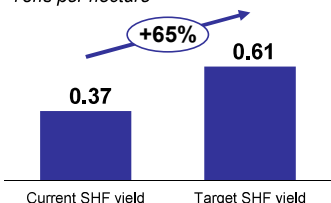
Drivers of R&R need:



Need is primarily driven by old trees (50-70 years in some places) and bad current practices. To a lesser extent, R&R need is driven by disease exposure (Coffee Wilt Disease) and by climate change in the Western part of the country

Uplift potential: High potential for SHF yield increase, though little impact

Current SHF yield & potential uplift¹ Tons per hectare



Potential increase in supply

~10-30%

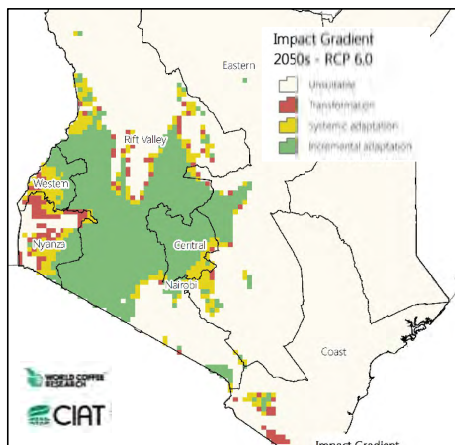
Total national supply could increase ~10-30% if R&R and GAP is implemented on all SHF land in need of R&R²

Notes: (1) Average yield is calculated as the total SHF production divided by the total SHF land. The potential yield improvement is estimated by GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 65%, and the range reflects a 25-100% R&R success rate. Source: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; USDA, *Annual Coffee Report*, 2017; Kenya Agricultural & Livestock Research Organization; Coffee Development Fund, *Financing Smallholder Coffee Farmers in Kenya*, 2011; Republic of Kenya, *Report of the National Task Force on Coffee Sub-Sector Reforms*, 2016; Dalberg Interview

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Viability: Climate change is expected to mainly impact Western Kenya

Suitability map



- The majority of Kenyan coffee growing areas look to be unaffected by climate change
- Areas in the southwest of the country look to be more affected

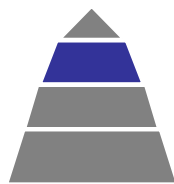
Other viability considerations

- Farmer share of the export price is around 75%. Local wet mills have the potential to decrease their operational costs, which could result in farm-gate price increases
- Labor costs on average equal USD 260 /ha, corresponding to more than twice the labor costs in Ethiopia and Tanzania. Labor costs have increased over the past years
- Traditional coffee growing areas face competition from housing and enterprise development

Kenya's SHF coffee sector is built around cooperatives, but the enabling environment could be improved



Farmer segmentation: Most SHFs are in tight value chains



National production is dominated by SHFs

The majority of SHFs are members of coops, and therefore included in tight value chains

SHFs '000 **650** (~3.5% of global SHFs¹. SHFs are progressively replacing large plantations)

SHF land '000 hectares **83** (~75% of national land) – farm size typically ~0.1-0.5 hectares

SHF production '000 tons **31** (~60% of national production)

Assessment of SHF orgs. Strong coop movement, but high level of mismanagement. ~100% of SHFs are linked to coops

Links to market Coops links the overwhelming majority of SHFs to markets

Enabling environment for R&R: Relatively weak political support to coffee

Political environment



- Coffee share of GDP: N/A [Coffee Share of exports: 4.6% (2016)]
- National government and County governments cooperate in a "Task Force for Coffee sub-sector Reforms", but observers complain about lacking coordination and poor implementation of legislative measures
- The Task Force recommends several measures, including the rule on prompt payment (farmers should be paid at least 40% of the prevailing price on the spot for the cherry they deliver), and a subsidy program for SHFs, offered as a package including fertilizer, planting materials for new varieties, and TA. Implementation of these measures is slow

Availability of inputs



- The Coffee Research Foundation (CRF) produces four different varieties of verified Arabica coffee, but not at commercial volumes
- Some cooperatives develop their own nurseries, sometimes with the support of private companies, but seeds are not controlled

Availability of finance



- Some cooperatives provide credit via the Coffee Development Fund¹ at affordable rates (5% in KES). However, volumes are limited
- Marketing agents and traders provide larger volumes of credit, but interest rates are high (>15% in KES)

Knowledge availability



- Not all coops are able to provide high-quality TA
- The Ministry of Agriculture and County governments provide extension services, but do not have sufficient extension officers to reach all SHFs

Examples of R&R programs: Past R&R programs have focused on increasing adoption of GAP and building SHF organization capacity

- TechnoServe - The Coffee Initiative (2008-2017):** Technoserve trained roughly 12,000 Kenyan SHFs on the use of GAP and rehabilitation practices

Notes: (1) Assuming a global SHF population of 20 million. (2) The Coffee Development Fund is a state corporation under the Ministry of Agriculture in Kenya, established in 2006 as a financing vehicle for revitalizing the coffee sector. CoDF provide long-term affordable credits to farmers organized into cooperatives. Source: FAO Statistics database; ICO statistics; GCP and Technoserve, *Economic Viability of Coffee Farming*, 2017; USDA, *Annual Coffee Report*, 2017; Kenya Agricultural & Livestock Research Organization; Coffee Development Fund, *Financing Smallholder Coffee Farmers in Kenya*, 2011; Republic of Kenya, *Report of the National Task Force on Coffee Sub-Sector Reforms*, 2016; Dalberg Interview

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Costa Rica is a relatively small producer with high R&R need driven by age of trees, disease and climate change

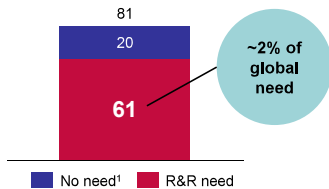


Quick facts: Costa Rica is a relatively small Arabica producer

Production '000 tons, 2014	Production share Global & region	Coffee land '000 hectares, 2014	Varieties Arabica-Robusta
84	14th in world 7th in LA	81	100% A 0% R

R&R need: ~75% of land is in need of R&R

SHF land in R&R need out of all land
'000 hectares



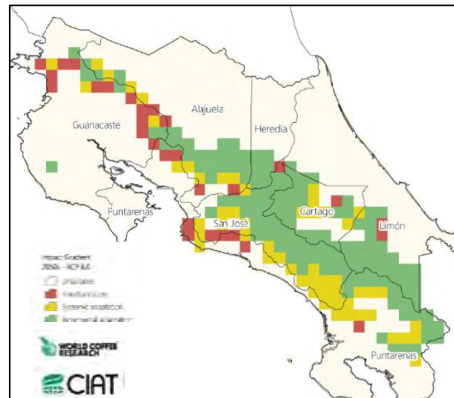
Drivers of R&R need:



Need is mostly driven by high age of trees (75% of trees have passed peak productivity), but also La Roya (affects 40% of trees) and climate change

Viability: Western and Northern areas are exposed to climate change

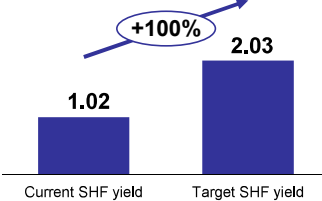
Suitability map



- Costa Rica could be impacted by climate change, especially in its Western and Northern growing areas
- There is need for both transformation and systemic adaptation

Uplift potential: Significant uplift for SHFs, though little impact on supply

Current SHF yield & potential uplift¹
Tons per hectare



Potential increase in supply

~10-50%

Total national supply could increase ~10-50% if R&R and GAP is implemented on all SHF land in need of R&R²

Other viability considerations

- Costa Rica has a well-functioning and transparent coffee sector that is relatively easy to invest in
- Production costs are high compared to other countries – partly as a result of government regulation: There is a relatively high minimum wage and imposition of 42% of social security tax.
- There is a strong enabling environment that contributes to the well-functioning of the coffee sector
- Diversification of income is needed – it takes around eight hectares to sustain a family of five, but average SHF farm size is around three hectares
- Farmer share of the coffee price is guaranteed by law

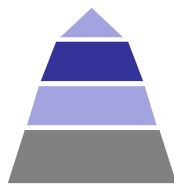
Notes: (1) The current yield is based on a specific estimate from the Coffee Institute of Costa Rica (ICAPE) and does not correspond to a manual calculation of SHF production divided with SHF land (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 100%, and the range reflects a 25-100% R&R success rate. Sources: Dalberg interviews

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Costa Rica is dominated by SHFs that work in a well-structured coffee sector with strong government support and access to R&R project components



Farmer segmentation: Production is dominated by strong SHFs



National production is dominated by SHFs in tight value chains

Around 45% of SHFs are connected to coops and micro-mills. Farmer organizations are well run and help to conduct R&R. Farmers receive support to market efficiently through Banking System for Development

SHFs '000 **41** – ~0.5% of global SHFs

SHF land '000 hectares **79** (~97% of national land) – farm size typically ~3 hectares¹

SHF production '000 tons **53** (~60% of national production)

Assessment of SHF orgs. SHFs are typically organized in coops and micro-mills

Links to market A majority of SHFs have strong links to market

Enabling environment for R&R: Strong environment for R&R

Political environment



- Coffee share of GDP: 0.7% in 2011 - Coffee exports reached \$374.9 million in calendar year 2011
- 55 of 81 cantons produce coffee – coffee is a major sector geographically and politically
- There is strong political support and the coffee sector is tightly regulated for increased transparency

Availability of inputs



- Costa Rica has authorized seed production programs
- The Coffee Institute of Costa Rica produces the seeds and a government body regulates this production

Availability of finance



- The Banking System for Development helps finance coffee production and R&R
- Farmers have access to flexible loan products through public banks

Knowledge availability



- The Coffee Institute of Costa Rica has a national research centre on coffee production
- SHFs cannot afford agronomists, but The Coffee Institute of Costa Rica has six regional offices that are fully in charge of implementing new capabilities for SHFs.

Examples of R&R programs: There has been a national replanting program in Costa Rica in recent years

- National Program for Coffee Plantation Renewal (PNRC)** (2010-2015) – National replanting program with objective to replant 16,000 hectares, with funding of USD 81 million. Only 16% of objective was achieved

Notes: (1) Again, these are specific estimates from ICAFE that do not correspond with the FAO 2014 total production and land numbers on the previous page. Sources: USDA, Costa Rica's coffee production expected to decline in 2012- 2013, 2013; Dalberg interviews

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Nicaragua has recovered relatively well from a recent *La Roya* outbreak, though climate change and insufficient practices drive further R&R need

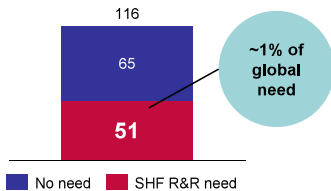


Quick facts: Nicaragua is a relatively small producer

Production '000 tons, 2014	Production share Global & region	Coffee land '000 hectares, 2014	Varieties Arabica-Robusta
90	12th in world 6th in LA	116	~100% A ~0% R

R&R need: ~45% of total land is in need of R&R

SHF land in R&R need out of all land
'000 hectares

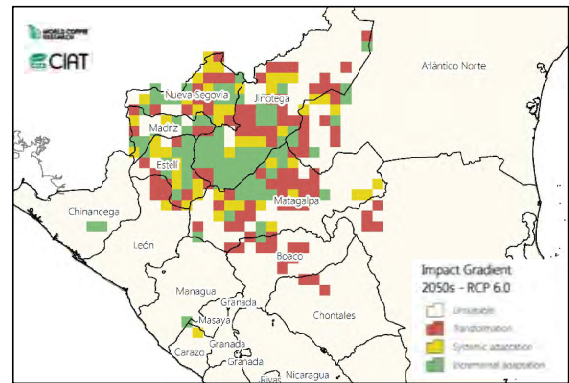


Drivers of R&R need:

The main drivers are disease (Nicaragua was hit by *La Roya*), bad current practices and old trees in some areas. Climate change could potentially also affect Nicaragua severely

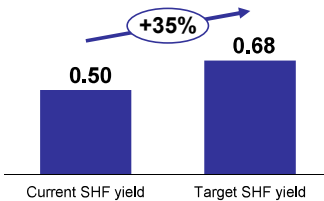
Viability: Climate change could be a risk – potential for Robusta?

Suitability map: Climate change could severely impact Nicaragua



Uplift potential: Though yields are low, SHFs are too few to drive total supply

Current SHF yield & potential uplift¹
Tons per hectare



Potential increase in supply

~5-10%

Total national supply could increase ~5-10% if R&R and GAP is implemented on all SHF land in need of R&R²

- Several areas of Nicaragua could be severely affected by climate change, requiring transformative investments
- The forecast indicates that impact is spread throughout the country

Other viability considerations (from GCP viability study)

- Less than 2% of the production is currently in Robusta, but private sector investments expect to increase production of Robusta by 30% in 2017/18
- Farmers receive ~68% of the export price and the supply chain involves a number of intermediaries – there is room for increasing supply chain efficiency and SHF share of export price
- Nicaraguan coffee is well placed to qualify as specialty coffee. However, farmers are not currently incentivized to invest in quality improvements as they are unable to capture the associated premium

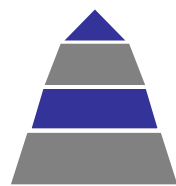
Notes: (1) The current yield is calculated on the basis of SHF production divided by SHF land area in 2014, the potential yield uplift comes from the GCP study on Nicaragua: GCP, *Nicaragua: GCP: Economic Viability of Coffee farming*, 2017 – this study cites an average SHF yield of 10.2q/mz; (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 35%, and the range reflects a 25-100% R&R success rate. Sources: FAOstat, *Coffee production and land under coffee*, 2014; ICO production statistics

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Nicaragua is less dominated by SHFs than other countries, and SHFs are therefore less likely to drive future supply uplifts



Farmer segmentation: SHFs represent ~40% of total production



National production is dominated by larger farms (>14 hectares)

SHFs¹ are predominately in loose value chains, relying on several middlemen to get to market

SHFs
'000 **30-45** (<1% of global SHFs²)

SHF land
'000 hectares **70** (~60% of national land) – average farm size ~1.5-2.5 ha)

SHF production
'000 tons **36** (~40% of national production)

Assessment of SHF orgs. Coops are not dominant – export around 20% of coffee in 2012/2013

Links to market SHFs most often rely on middlemen to sell their coffee. ECOM is dominant in the country and has close links to SHFs

Enabling environment for R&R: Relatively weak environment for R&R

Political environment



- Coffee share of GDP: N/A [Coffee share of exports: 8.3% (2015)]
- Liberal coffee economy: no coffee institute or board, 3 traders dominate the market (ECOM, Olam, Mercom)
- Tax income for coffee has been left in a fund because there is no disbursement rules

Availability of inputs



- Nicaragua has good seedling facilities that provide seeds for the whole region (Honduras, Guatemala, El Salvador) for the 1T1B program (Starbucks). Nicaragua has the 1st private lab for seedlings (CIRAT and ECOM)

Availability of finance



- Low availability of finance and limited presence of local banks in the R&R market (long term debt)
- Farmers connected to ECOM has relied on financing via their replanting programs (not just SHFs)

Knowledge availability



- SHFs lack access to training programs and there is a lack of public extension service officers

Examples of R&R programs: Past R&R programs have largely focused on renovation in response to *La Roya*

- **Root Capital, USAID, Keurig, Starbucks – Coffee Farmer Resilience Initiative (2013-2016):** USD 3.5 million in loans to a local coop for SHF renovation
- **ECOM, Starbucks, IDB, IFC – ECOM Renovation (2013-ongoing):** ECOM, in a innovative partnership with Starbucks, IFC, and IDB provided renovation loans to Nicaraguan farmers
- **Catholic Service Relief, CIAT – Rust to Resilience (2014-2016):** Renovation program to help farmers overcome *La Roya*

Notes: (1) SHFs in Nicaragua are sometimes referred to as farms up to 14 hectares – we focus on SHFs with <3 hectares in farm size. (2) Assuming a global SHF population of 20 million – estimates of farmers are high-level only and vary significantly. Source: GCP, *Nicaragua: GCP: Economic Viability of Coffee farming*, 2017; FAOstat, *Coffee production and land under coffee*, 2014; ICO production statistics; USDA, *Nicaragua Coffee Annual Report*, 2017;

Papua New Guinea (PNG) is an important regional producer with significant potential for yield uplifts and increase in national supply

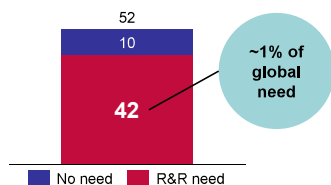


Quick facts: PNG is the 5th largest producer in Asia

Production ¹ '000 tons, 2014	Production share Global & region	Coffee land ¹ '000 hectares, 2014	Varieties Arabica-Robusta
56	16th in world 5th in Asia	52	~95% A ~5% R

R&R need: ~90% of total land is in need of R&R

SHF land in R&R need out of all land
'000 hectares



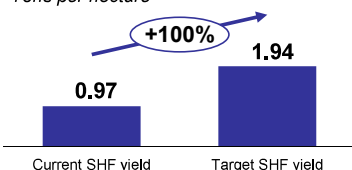
Drivers of R&R need:



Need is primarily driven by old trees and bad current practices. The recent outbreak of Coffee Berry Borer, an endemic beetle, increases the R&R need

Uplift potential: Significant uplift potential given low current SHF yields

Current SHF yield & potential uplift²
Tons per hectare



Potential increase in supply

~20-90%

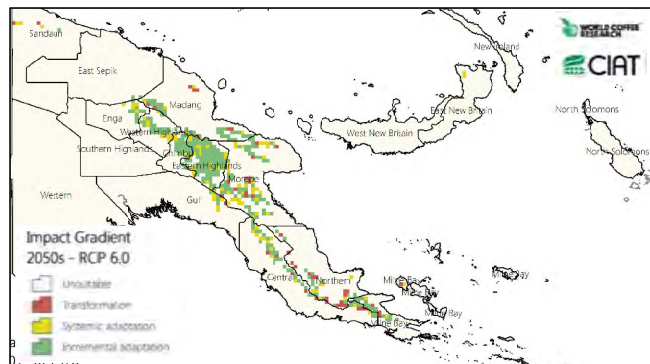
Total national supply could increase ~20-90% if R&R and GAP is implemented on all SHF land in need of R&R³

Notes: (1) No formal mapping of coffee growing areas in the country has been undertaken, FAO data is highly uncertain and land under coffee is likely to be underestimated. (2) The current yield is calculated on the basis of SHF production divided by SHF land area. Given that coffee growing area is likely underestimated, SHF yields are likely estimated too high. (3) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 100%, and the range reflects a 25-100% R&R success rate. Our interviews suggest very low yields that could be doubled. Source: FAO Statistics database; ICO statistics; USDA, *Annual Coffee Report*, 2017; Daniel Giovanni and John Hunt, *Papua New Guinea: Strategic Assessment of the Coffee Sector*, 2009; CIC, *The Papua New Guinea Coffee Handbook*, 2016; Dalberg Interview

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Viability: Climate change is not forecast to impact significantly

Suitability map



- Climate change is not forecasted to impact PNG significantly though individual areas might require systemic adaptation, and in few cases, transformation

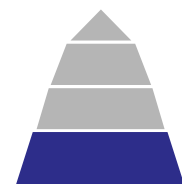
Other viability considerations

- No national or regional census have been held in Papua New Guinea so there is little comprehensive information on the coffee sector
- The lack of road infrastructure hampers the growth of the coffee sector and increases the difficulty of implementing R&R programs

Papua New Guinea has structural deficiencies that hamper the development of the coffee sector



Farmer segmentation: Most SHFs are at the bottom of the pyramid



National production is dominated by SHFs

The majority of SHFs are in disconnected value chains, with weak and erratic links to market. SHF orgs. are generally mismanaged and lack capacity

SHFs '000 **~500** – There is no population census, hence high uncertainty on the number of SHFs

SHF land '000 hectares **47** (~90% of national land) – farm size typically <1 hectare

SHF production '000 tons **45** (~95% of national production)

Assessment of SHF orgs. Weak and underperforming coop sector – ~5% of SHFs are linked to coops

Links to market SHFs have no formal links to market and sell their unprocessed coffee in road markets

Enabling environment for R&R: Weak enabling environment

Political environment



- Coffee share of GDP: N/A [Coffee share of exports: 1.6% (2015)]
- Observers describe the Coffee Industry Corporation (CIC) as a bureaucratic and inefficient organization
- The lack of roads is a bottleneck for productivity and exports

Availability of inputs



- No centralized nurseries
- Seeds are produced by farmers themselves using traditional techniques, with no quality control
- SHFs have little, or no access, to other inputs (e.g. fertilizers)

Availability of finance



- SHFs have limited access to long-term credit. Banks or credit institutions do not lend to unorganized SHFs
- Exporters / private sector actors can pre-finance SHFs, but this source of finance is inefficient for R&R

Knowledge availability



- Most SHFs do not receive any form of TA
- PNG is the most linguistically diverse country in the world, with over 850 languages spoken. This diversity, together with the lack of infrastructure, makes the providing of TA to SHF difficult and costly

Examples of R&R programs: Past government R&R programs were mostly unsuccessful

- CIC and Government - Industry-wide renovation pruning** (late 1990s) – The purpose of the program was to increase productivity, but, according to interviews and observes, the program was mismanaged and achieved poor results
- Government - National Agriculture Development Plan** (2006 – 2011) – The program aimed at “Injecting new life” into agriculture and the coffee sector, but was mismanaged and abandoned after five years
- The world Bank - Productive Partnership in Agriculture** (2010 – 2019) – The purpose of the program is to improve the livelihoods of coffee and cocoa SHFs through improved productivity. To date, the program has focused more on cocoa renovation

Source: FAO Statistics database; ICO statistics; USDA, *Annual Coffee Report*, 2017; Daniel Giovanni and John Hunt, *Papua New Guinea: Strategic Assessment of the Coffee Sector*, 2009; CIC, *The Papua New Guinea Coffee Handbook*, 2016; Dalberg Interview

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El Salvador's coffee production was severely hit by *La Roya* and could be highly exposed to climate change

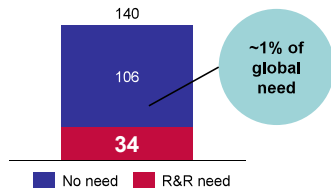


Quick facts: El Salvador is a relatively little producer

Production '000 tons, 2014	Production share Global & region	Coffee land '000 hectares, 2014	Varieties Arabica-Robusta
42	20th in world 10th in LA	140	100% A 0% R

R&R need: ~80% of land is in need of R&R

SHF land in R&R need out of all land
'000 hectares



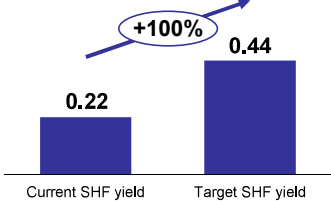
Drivers of R&R need:



Need is driven by exposure to climate change in most of the coffee growing areas, age of trees, and exposure to disease (more than 70% of coffee lands were affected by *La Roya*)

Uplift potential: Significant uplift for SHFs, though little impact on supply

Current SHF yield & potential uplift¹
Tons per hectare



Potential increase in supply

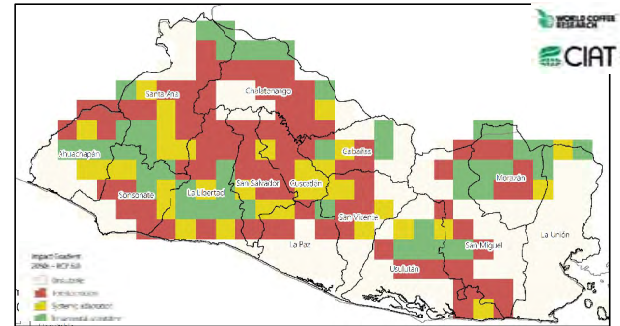
~5-15%

Total national supply could increase ~5-15% if R&R and GAP is implemented on all SHF land in need of R&R²

Notes: (1) The current yield is calculated on the basis of SHF production divided by SHF land area. The potential yield uplift is based on an internal estimate based on other mixed countries and current yield. (2) Rounded to the nearest 5%, estimate assumes that R&R and GAP increase yields with 100%, and the range reflects a 25-100% R&R success rate. Sources: USDA, *El Salvador: Annual Coffee Report, 2017*; Jimmy Sherfey, *Salvador's Coffee Industry at a Crossroads*, <https://dailycoffeenews.com/2016/01/06/el-salvadors-coffee-industry-at-a-crossroads/>, 2016; International Coffee Organization, *Perfil de pais cafetero: El Salvador, 2016*.

Viability: Most coffee growing areas are exposed to climate change

Suitability map



- Climate change could severely affect most of El Salvador's coffee regions

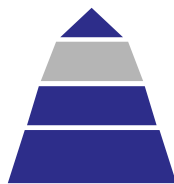
Other viability considerations

- Many children of coffee farmers turn to more lucrative, or less climate exposed food crops, or to non-farm activities
- Minimum daily wage for coffee harvesters is low – approximately USD 4
- Labor costs/salaries have decreased by 12% over the past five years, while fertilizer costs have increased by 3% and financial costs by 5%
- The "Cup of Excellence" competition promotes specialty coffees in El Salvador. Focusing on specialty coffee markets could increase producers' revenues

El Salvador is dominated by medium and large farms, and SHFs therefore have less impact on potential increase in total supply



Farmer segmentation: Production is dominated by large farmers



National production is dominated by large producers

40% of coffee farms are large estates above 70 hectares¹. There are 81 large cooperatives, but they do not target SHFs, who are mostly disconnected or in loose value chains

SHFs
'000 **17** – ~0.1% of global SHFs²

SHF land
'000 hectares **30** (~30% of national land) – farm size typically ~0.5 hectares

SHF production
'000 tons **8.5** (~20% of national production)

Assessment of SHF orgs. SHFs are typically not organized in coops

Links to market A majority of SHFs have loose and erratic links to market

Enabling environment for R&R: Relatively weak environment for R&R

Political environment



- Coffee share of GDP: N/A [Coffee share of exports: 2.6% (2015)]
- There is insufficient political support to overcome the coffee sector crisis
- Government assistance programs to support SHFs affected by *La Roya* have mostly been ineffective

Availability of inputs



- El Salvador is the only coffee producing nation in Latin America that does not have a research institution that provides certified rust resilient seeds
- The lead SHF extension service institution, CENTA, aims to provide 8 millions rust resistant plants to SHFs in 2017

Availability of finance



- SHFs are highly credit constrained
- NCBA CLUSA recently partnered with Banco Hipotecario, one of the largest mortgage banks in El Salvador, to create a blended finance facility to deliver long-term credit to SHFs. The Bank aim to deliver USD 6.5 million in loans to SHFs

Knowledge availability



- The Salvadoran Coffee Council and CENTA provide extension services to SHFs. CENTA employs 85 officers who assist 7,000 SHFs with bi-monthly visits and field training
- Observers complain about the low efficiency of public extension services

Examples of R&R programs: Past R&R programs have focused on renovating areas affected by *La Roya*

- Starbucks - One Tree One Bag** (2016-2018) – For each bag of coffee sold, Starbucks gives USD 0.70 to seed distribution to areas affected by *La Roya* in Guatemala, El Salvador, and Mexico
- NCBA CLUSA - Coffee rehabilitation and agricultural diversification project** (2014 – 2018): NCBA CLUSA is working to improve the capacity of 50 cooperatives and 7,500 SHFs to renovate 6,000 hectares
- World Coffee Research - Seed Verification program** (2016 – 2020) – WCR partners with local nurseries to develop genetic control of seeds

Notes: (1) A majority of coffee estates were parceled out into SHF properties as part of an agrarian reform in the 1980s (2) Assuming a global SHF population of 20 million. Sources: USDA, *El Salvador: Annual Coffee Report, 2017*; Jimmy Sherfey, *Salvador's Coffee Industry at a Crossroads*, 2016; International Coffee Organization, *Perfil de pais cafetero: El Salvador, 2016*; Ecuador Government, *National Census, 2017*.

Agroforestry and Reforestation Insetting Projects



OVERVIEW

Agroforestry consists of regenerating and preserving agricultural and forestry ecosystems by planting trees around and inside coffee plantations. PUR Projet has implemented agroforestry among coffee tree plantations in rural farming communities threatened by poor coffee yields, degraded ecosystems and climate change extreme events affecting crops. Trees are planted by farmers to provide food, fuel, and environmental benefits, while increasing coffee yields and quality.

Trees within coffee plots allow regeneration and soil fixation, preservation of biodiversity, improved productivity and quality of coffee, and an additional source of income for local communities. These trees also allow farmers to diversify their crops, thus increasing climate resilience and reducing the risk of shifting to monocrop culture. The projects are funded by coffee companies willing to inset (offset internally), their carbon and water footprint as well as generate multiple positive impacts for People and the Planet.

GEOGRAPHIC FOCUS

Ethiopia, Tanzania, Colombia, Guatemala, Peru, Indonesia, Thailand.

KEY ACTIVITIES

Developing insetting agroforestry projects at the landscape level, from project design, nursery, plantations, certifications (VCS, Gold Standard) and project monitoring over 40 years to regenerate coffee farms.

TIMELINE

Projects are usually run on a 40-year period.

TARGET

To strategically integrate trees (agroforestry) into current coffee farming systems in an effort to preserve productive ecosystems, increase coffee crop yields and farmers' incomes, and adapt to climate change. The trees provide multiple services that ensure improved quality and long-term sustainability of production.

IMPACTS TO DATE

- 3 million trees planted in Oro Verde & Acopagro cooperatives, San Martin region, Peru.
- 300,000 trees planted in Ethiopia.
- 700,000 trees planted in Cauca and Nariño regions of Colombia.
- 500,000 trees planted in Guatemala.
- 300,000 trees planted in Kopi Lestari, Indonesia.

PARTNERS

Nestlé Nespresso, Nescafe, Unilever, Ecom, Louis Dreyfus Company & Foundation, Federación Nacional de Cafeteros (FNC), Sidamo Union, ADESC, UPC, Oro Verde, IDH.

KEY LESSONS

- Trees are among the best investment to regenerate ecosystems with multiple positive impacts on soil, water, biodiversity, carbon, social & economic.
- Agroforestry is a must to make coffee sustainable and resilient to climate change events as well as regenerate coffee ecosystems and reduce the impact of diseases like coffee rust.

FIND OUT MORE

<http://www.purprojet.com/agroforestry-and-reforestation/>

El Salvador Coffee Rehabilitation and Agricultural Diversification Project



OVERVIEW

NCBA CLUSA is committed to increased production and sustainability within the coffee sector as it relates to the economic and social development of El Salvador. NCBA CLUSA is currently working with coffee co-ops, producer organizations, government agencies and the private sector in the country to rehabilitate farms after coffee rust decimated up to 80 percent of crops in 2013.

GEOGRAPHIC FOCUS

El Salvador

KEY ACTIVITIES

Technical assistance, provision of tree donations, coordination of R&R efforts, nursery development, data collection / monitoring

TIMELINE

2014 - September 2018

IMPACTS TO DATE

At the end of 2016, approximately \$420,000 worth of funding had been approved for projects including 40 nurseries capable of producing over 4.2 million seedlings and 39 facilities for organic pesticide and fertilizer production. By March 2017, 4,000 farmers had received financial backing for the rehabilitation and renovation of their farms.

PARTNERS

United States Department of Agriculture (USDA), CLUSA de El Salvador, Ministerio de Agricultura y Ganadería, CENTA-Café, Consejo Salvadoreño de Café, Banco Hipotecario, SALVANATURA, Coordinadora Latinoamericana y del Caribe de Pequeños Productores y

Trabajadores de Comercio Justo, Comercial Exportadora, Asociación Salvadoreña de Catadores de Café, Asociación Alianza de Mujeres en Café de El Salvador

KEY LESSONS

- Despite significant buy-in from public and private institutions, these relationships need to be strengthened as well as with academia to ensure sustainability after September 2018.
- Producers and nursery managers with underutilized or idle lands need increased access and options for financing renewal and rehabilitation.
- The promotion of rehabilitation and reactivation through rust resistant varieties and organic agriculture has had significant public and private buy-in.

FIND OUT MORE

<http://ncba.coop/ncba-international/1994-ncba-clusa-s-crop-diversification-program-delivers-more-than-high-profits-for-coffee-farmers-in-el-salvador>

Global Coffee Monitoring Program



OVERVIEW

A network of hundreds of on-farm research plots in farmer fields, established in partnership with coffee companies, NGOs, and other institutions. Partners and WCR collect data on the performance of improved varieties and agronomic treatments across diverse farm types and regions globally, providing hard data for farmers and other supply chain actors about which treatments lead to increases in productivity and/or profitability for the farmer.

Each farm trial site uses the farmer's current varieties and practices as controls for comparison. The primary hypothesis is that this trial—one of the largest coordinated global trials on coffee crop performance ever conducted—will increase demand for improved varieties and expand knowledge of best agronomic practices according to different farm types, which can be applied for widespread farm renovation and rehabilitation programs.

GEOGRAPHIC FOCUS

WCR operates in 27 countries, including PROMECAFE countries (Central America, Peru, Jamaica), Mexico, Rwanda, Burundi, Zambia

KEY ACTIVITIES

Research, Data collection / monitoring, Development / distribution of educational materials

TIMELINE

2016 - 2025

TARGET

1,100 trial sites are planned in 20 key coffee producing countries, representing wide a range of agroecological zones and regional diversity

IMPACTS TO DATE

12 plots established in 2016; 19 in 2017, and 179 planned for 2018.

PARTNERS

ECOM, Mercon, Sucafina, Caravela, Keurig, RTC, USAID, Catholic Relief Services, IWCA, IHCAFE, ICAFE, Anacafe, NAEB, Abecafe, NCCL

KEY LESSONS

- For coffee research to be effective, the results cannot remain in the lab; they must ultimately reach into farmer fields.
- In order to produce useful results, agronomic research must capture the tremendous diversity of coffee farms/farmers in diverse climate zones.
- Capturing the diversity of coffee farms and farmers isn't possible without engaging a wide range of supply chain partners.
- Coordinating and standardizing data collection practices is essential with working with diverse partners

FIND OUT MORE

<https://worldcoffeeresearch.org/work/-farm-demonstration-trial-network/>

Mindanao Productivity in Agricultural Commerce and Trade Project



OVERVIEW

ACDI/VOCA was tasked with implementing the four-year USDA Food for Progress Mindanao Productivity for Agricultural Commerce and Trade (MinPACT) project. MinPACT increases the incomes of smallholder coffee farming families in Southern and Western Mindanao by training farmers and thus strengthening their capacity for improved farm management. This increases overall productivity, product quality, available services, and access to markets. This is accomplished via a multitude of interventions, one of which focuses on the support for the expanded use of improved agricultural inputs by providing capacity building. Additionally, grants are given to nurseries and seed production facilities. Lastly, ACDI/VOCA facilitates the adoption of new and/or improved processing equipment or system designs to reduce post-harvest losses and improve quality.

GEOGRAPHIC FOCUS

Philippines

KEY ACTIVITIES

- Technical assistance provision.
- Nursery development.
- Coordination of R&R efforts.

TIMELINE

2014 - 2018

TARGET

Improve the competitiveness of coffee, cacao, and coconut value chains, strengthen local capacity and services for improved post-harvest systems and handling practices, facilitate enhanced financial services, including insurance and credit availability for farmers and

agribusiness service providers, and increase market access, opportunities, and efficiency of agricultural products and services.

IMPACTS TO DATE

- 10,732 individuals (5,688 women and 5,044 men) directly benefitted.
- Assisted 6,360 farmers to create and implement farm plans.
- Supported 8,480 producers by facilitating the development of market information sources and systems.

PARTNERS

USDA Food for Progress (Funder)

KEY LESSONS

- Well managed nurseries with quality planting material are critical to establishing a new tree crop.
- Good information and a multifaceted communications strategy increases adoption levels.
- A well designed and managed M&E system is worth the effort, as good data facilitates implementation and attracts stakeholders and investors.
- Market segmentation to increase price opportunities and making coffee farming exciting through cupping and multiple PHH methods incentives farmers to plant coffee.

FIND OUT MORE

<http://www.acdivoca.org/projects/mindanao-productivity-in-agricultural-commerce-and-trade-minpact-project/>

Seed Verification Program



OVERVIEW

Billions of coffee trees need to be replanted globally, but because there is no global standard or certification for seed in the coffee industry, these replacement seedlings are at risk of not being high quality and genetically pure, which threatens productivity and producer profitability. To address this problem, WCR began a program to develop the first independent, science-based quality assurance standard for coffee seeds and plants. An independent, third-party auditor (NSF International) conducts certification audits of nurseries and seed lots to evaluate nursery standards, genetic purity, farmer education, and adherence to breeder's rights to ensure seed/plant quality and viability.

GEOGRAPHIC FOCUS

2016-2019: Central America, expanding globally thereafter.

KEY ACTIVITIES

- Quality assurance.
- Nursery and seed sector development.
- Development/distribution of educational materials.

TIMELINE

Certification development: 2015-2017;
certification launch: 2017 (Central America);
certification global rollout: 2019-2025.

TARGET

The goal of the program is to make WCR Verified seeds readily available to coffee producers across the world by 2025.

IMPACTS TO DATE

World Coffee Research Verified is the first global standard for seed quality for coffee (certification standards formalized and published in September

2017) and the only sector-wide program to independently verify coffee plant quality and variety using DNA technology. In 2016, 3 nurseries were verified in a pilot study in El Salvador, Nicaragua, and Guatemala. In 2017, an additional 10 nurseries were audited; the program will expand across Central America to reach 30% of nurseries in the region by 2020.

PARTNERS

Third-party certifier NSF International formalized the WCR standard, and conducts independent audits. The program was rolled out with partners including J. Hill Coffee Producers, Pilonos de Antigua, ECOM Trading, Starbucks, and Conservation International.

KEY LESSONS

- Establishing a new global standard requires both technical expertise (e.g. in coffee plant propagation, coffee genetics), and expertise in global standards best practices. Therefore, it's essential to have the right partners and appropriate agreements in place to ensure program integrity.
- Scaling a program globally requires local knowledge and infrastructure for business development.
- Stimulating demand for a new standard (which, effectively, changes the way business is done for many nurseries) requires significant investments in education of nursery owners/managers, renovation program managers, and coffee buyers.

FIND OUT MORE

<https://worldcoffeeresearch.org/work/seed-and-nursery-verification-program/>

Seeds Program

OVERVIEW

The Seeds program gives small grants to producers and producer organizations in the Counter Culture supply chain to implement social and environmental sustainability projects they identify. Counter Culture funds many diverse projects, believing strongly that their producer partners know what's most needed in their communities. Seeds applicants occasionally apply for renovation projects, which are planned and implemented on a co-op level. One project at La Voz in Guatemala involves growing 30,000 seedlings to be planted on the farms of 100 producers.

GEOGRAPHIC FOCUS

Guatemala, Nicaragua, El Salvador, Honduras, Colombia, Bolivia, Peru, Rwanda, Burundi, Uganda, Kenya, Ethiopia, Papua New Guinea, Timor Leste.

KEY ACTIVITIES

Provide funds for co-op-level renovation projects, data collection / monitoring, and research.

TIMELINE

On-going. Most recent renovation project through Seeds program happening at La Voz June 2017 – June 2018.

TARGET

At least \$40,000 in 2017 Seeds grants. Counter Culture is also engaging with suppliers to identify feasible climate change adaptation strategies – renovation being one – and plan to repeat this process with all of their producer partners.

IMPACTS TO DATE

Strategies that were formerly researched are in the process of being implemented at certain co-ops.

PARTNERS

Nicholas School of the Environment at Duke University (Research).

KEY LESSONS

- Farmers often receive incomplete information when given access to coffee varieties, especially re: cup quality.
- Renovation and rehabilitation projects should be developed with farmer input and co-op level testing of varieties.
- Farmers recognize renovation and rehabilitation as potential common climate change adaptation strategies, but often lack access to the resources necessary (plants and money) to implement.

FIND OUT MORE

<https://counterculturecoffee.com/sustainability/seeds-program>

The Brazilian Association of Organic and Sustainable Coffee



OVERVIEW

ACOB is the implementer of a project supported by European foundations, traders, roasters, cooperatives, associations, producers, governments etc., which has been training 2,500 small and middle coffee farmers on sustainable production, coffee quality, group organization, and better market access. Smart and efficient training has been delivered to producers and trainers that has shown evidence of positive impacts on coffee productivity, resilience to severe climate, coffee quality, environmental sustainability and farmers livelihoods.

The training modules are composed of (a) Smart and low-cost practices on soil, plant and pest management to increase yields and sustainability, (b) Practices to increase coffee resilience against severe climate conditions, (c) How to increase coffee quality and reach better markets and (d) Characteristics and advantages of being organized into groups, associations and cooperatives. Rehabilitation is one of the practices promoted as part of this training.

GEOGRAPHIC FOCUS

Brazil

KEY ACTIVITIES

Technical assistance provision, Development of educational materials, Research, Markets work.

TIMELINE

2014 – 2017

TARGET

To benefit 2,500 Brazilian small-scale farmers through improving coffee sustainability via smart, clean and efficient technologies.

IMPACTS TO DATE

- End of 2015: 12,000 metric tons of sustainable Brazilian coffee was produced.
- Over 2,500 small and middle coffee farmers trained in best practices.
- Increases in average producer yields and reduction in cost of production.

PARTNERS

Trabocca, Lebensbaum, Simon Levelt, Coopfam, IDH, Coopervitae, FAF Coffees, Bourbon specialty coffees, Cachoeira Coffees, Instituto Federal do Sul de MG.

KEY LESSONS

- Having key players, as project partners, both from private and public sector gave credibility to the project.
- Leadership and negotiation skills of ACOB team in keeping partners committed and engaged in the project implementation.
- Practices and ideas disseminated have a clear short to mid-term economic link which helped very much on building the relationship with producers.
- A team of professionals who interact very well with producers, have on ground coffee experience, and also theoretical and scientific knowledge on coffee and sustainability.
- A group training methodology that promotes the “teaching”, while allows exchange of experiences within the group.
- Promotion of the coffees in international coffee shows, and directly to buyers, helped to have producers join the trainings and implement the practices.

FIND OUT MORE

<http://www.cafeorganicobrasil.org/english>

CHALLENGE PARTNERS

