  

MOON ISLAND

WORLD COFFEE ANALYTICS

CHAPTER 3: SUSTAINABILITY

MOON ISLAND – APRIL 2019

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INTRODUCTION

The following presentation outlines the dynamics of the complex coffee sustainability sector: a group of organizations dedicated to preserving the well-being of the coffee sector and its resources.

Coffee is an agricultural commodity that that belongs to a broader category of “tropical commodities,” which, because of their ecology, are grown in the global south and exported to the global north. As a result, the coffee industry and other tropical commodities are of particular interest to development economists and social activists. It is therefore not surprising that the coffee industry boasts one of the more active sustainability efforts when compared with other agricultural goods.

It is important to note that when we reference sustainability in this report, what we are actually describing is sustainable development – defined by the United Nations as, “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” Along with their definition of sustainable development, the UN published their 17 sustainable development goals for 2030 – which include slogans like “no poverty” and “gender equality.” These 17 goals have served as a common reference for development stakeholders, including those involved in coffee sustainability efforts.

There are several complex and interrelated social, economic and environmental issues that threaten the sustainability of the coffee sector – either by driving down coffee farmer incomes or depleting natural resources that are relied on heavily. Production of coffee is fragmented into many smallholder farmers who lack access to capital and other inputs – leading to slower yield growth than other agricultural goods. Meanwhile, rapidly rising production out of Brazil and Vietnam and the devaluation of the Brazilian real have put pressure on coffee prices. This has led to chronically low household incomes for coffee producers in certain countries.

In response to the issues outlined above, coffee sustainability stakeholders have organized into what we call the sustainability supply chain, which breaks off into two main divisions: voluntary sustainability standards and multi-stakeholder initiatives. The former are a demand-driven attempt to support coffee sustainability, while the latter are a value chain-driven attempt to support coffee sustainability. Both would be ineffective without dedicated sustainability research organizations to pinpoint sustainability issues for stakeholders to focus on.

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FOCAL SUSTAINABILITY ISSUES IN THE COFFEE SECTOR

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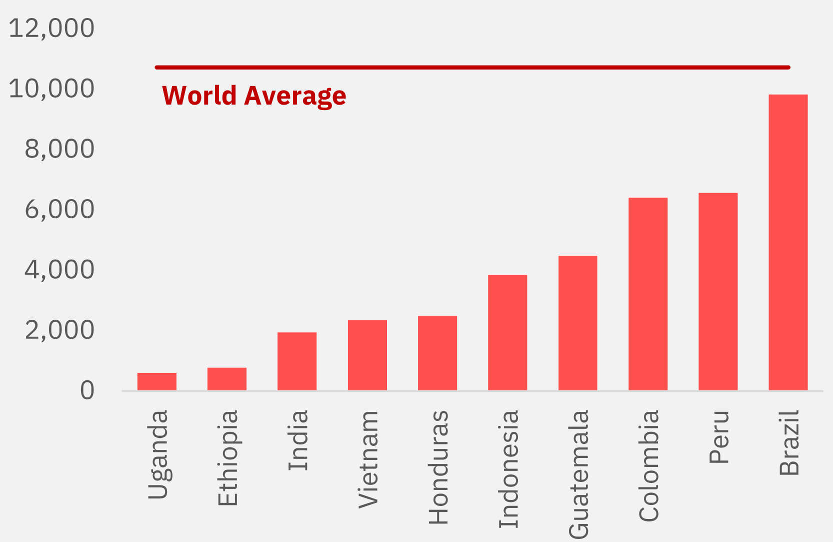
COFFEE PRODUCING NATIONS ARE AMONG THE POOREST

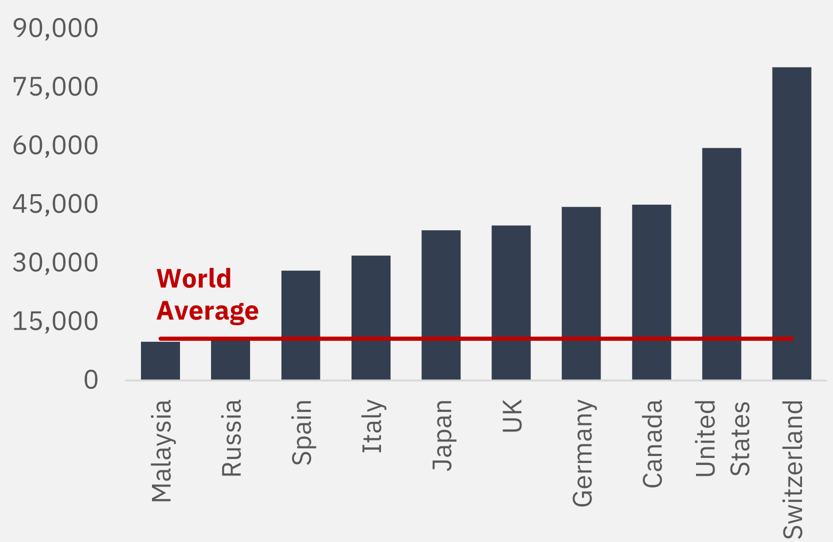
Coffee is an agricultural commodity that that belongs to a broader category of “tropical commodities” that, because of their ecology, are grown in the global south and exported to the global north. As a result, the coffee industry, and other tropical commodities, are of particular interest to development economists and social activists.

2017 GDP Per Capita *($US)*

Top 10 Coffee Exporters



Top 10 Coffee Importers



NOTES:

Sources: World Bank

THE PRESENT NEEDS OF THE SECTOR ARE MANIFESTED IN VARIOUS ISSUES

There are several complex and interrelated social, economic and environmental issues that threaten the sustainability of the coffee sector – either by driving down coffee farmer incomes or depleting natural resources that are relied on heavily.

Overview of the social, economic and environmental issues at the producer level

Social Issues

- Food insecurity
- Malnutrition
- Poor access to education and healthcare
- Gender inequality
- Aging farmer communities
- Migration & young people leaving coffee farming[1]

Economic Issues

- Lack of farm credit
- Low productivity
- Green bean price volatility
- Lack of market information
- Lack of direct market access
- Rising cost of living
- Aging coffee trees
- Land tenure uncertainty
- Limited access to insurance instruments
- Poor services through farmer organizations
- No living income Taxation

Environmental Issues

- Conversion of forest habitat
- Deforestation
- Loss of biodiversity and habitat destruction
- Soil erosion and degradation
- Agrochemical use and runoff
- Degradation of water quality and supply
- Limited waste management
- Eutrophication
- Coffee pests and diseases
- Mono-culture sun cropping

NOTES:

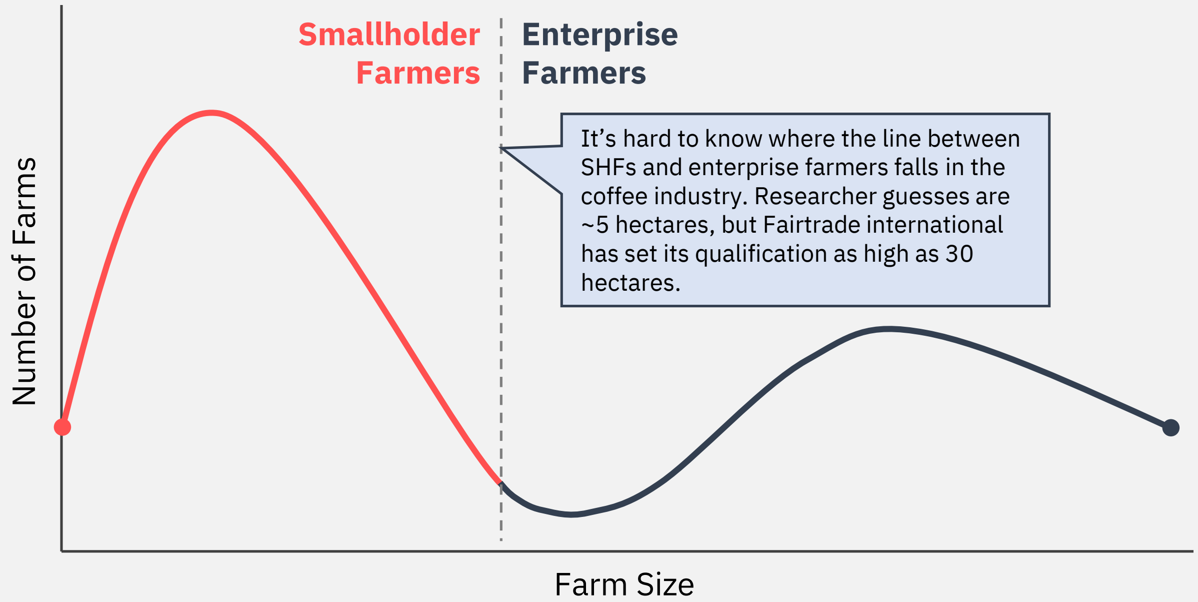
Sources: 2018 Coffee Barometer

1. While activists that are concerned about the future supply of coffee would see this as a challenge, most development economists are supportive of communities becoming less reliant on agriculture.

PRODUCTION OF COFFEE IS FRAGMENTED INTO MANY SMALLHOLDER FARMERS (SHFs)

25 million is a figure that is commonly referenced in coffee research communities on the number of smallholder coffee farmers worldwide. Up to **70% of global coffee production** comes from these small producers. However, data on the number and size of coffee farms is not conclusive.[2]

Coffee Farm Size Distribution *(Conceptual)*[1]



Smallholder Farmers (SHFs)

Farmland distribution in developing economies tends to be shaped like a barbell, with big clusters of land at both ends of the farm size spectrum. SHFs are defined as the farmers who reside in the large cluster on the small end of the distribution.

SHFs are not just unique to coffee. High SHF populations are present in the production of other tropical commodities such as cocoa and black pepper.

NOTES:

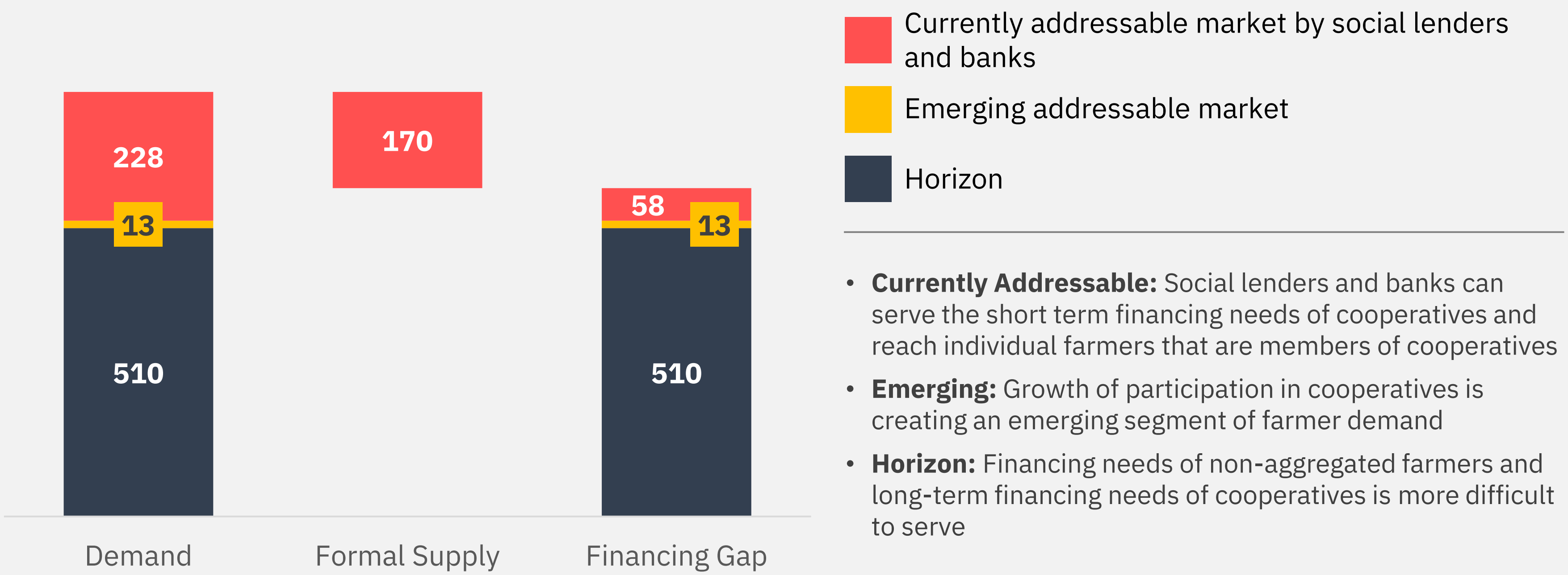
1. The graph pictured is not a reflection of actual coffee farm data.
2. Data availability is a major barrier to sustainability programs. Several data collection efforts are underway to improve data availability – especially on SHFs.

Sources:

SHFS IN MANY GROWING REGIONS LACK ACCESS TO CAPITAL AND OTHER INPUTS

Lack of financial literacy, poorly defined property rights, and high cost of borrowing in developing countries limits access to credit for smallholder farmers. Without access to credit, most smallholders are confined to outdated farming technology – leading to low productivity.

Example: Financing Gap In Peruvian Coffee



- **Currently Addressable:** Social lenders and banks can serve the short term financing needs of cooperatives and reach individual farmers that are members of cooperatives
- **Emerging:** Growth of participation in cooperatives is creating an emerging segment of farmer demand
- **Horizon:** Financing needs of non-aggregated farmers and long-term financing needs of cooperatives is more difficult to serve

NOTES:

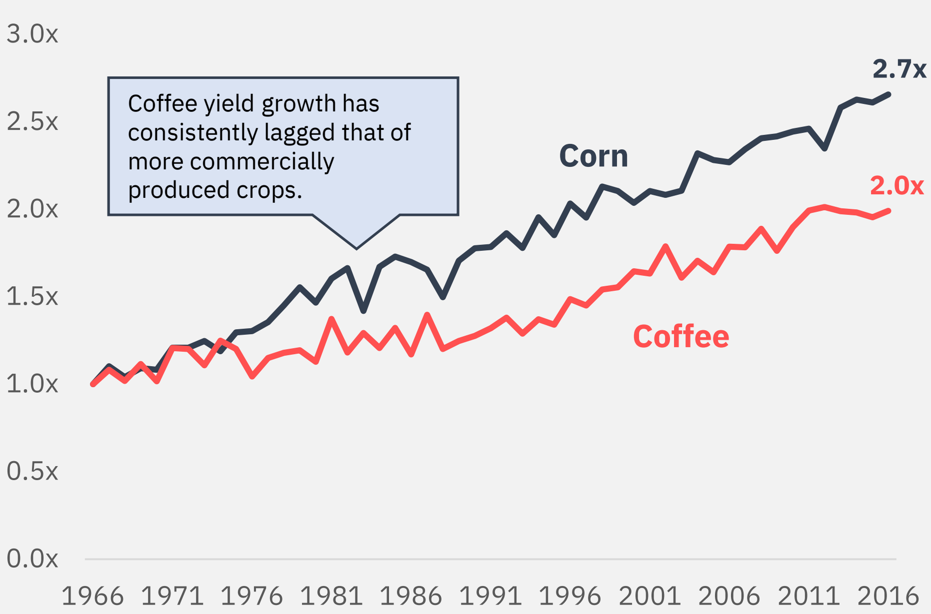
1. Formal supply includes commercial lending, social lending and financing from other formal institutions.

Sources: Dahlberg 2012

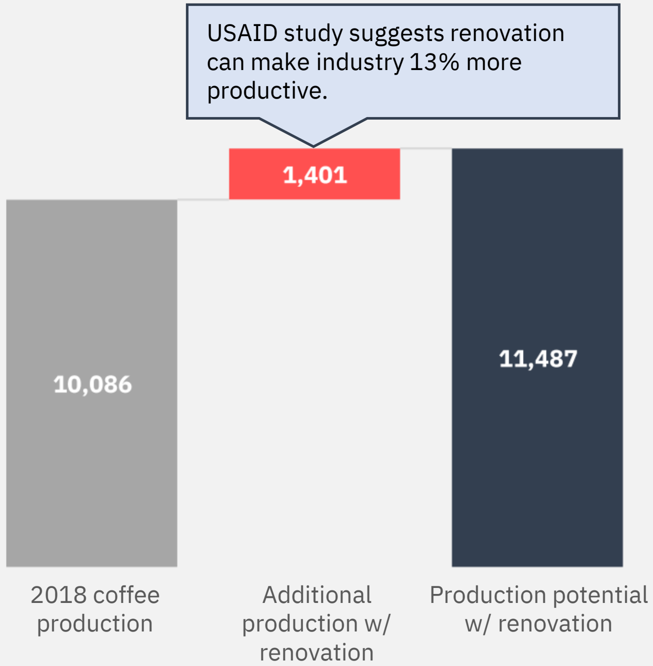
LOW INVESTMENT HAS SLOWED COFFEE PRODUCTIVITY GROWTH RELATIVE TO OTHER COMMODITIES

Coffee yield growth has consistently lagged that of more commercially produced crops. One reason for the slower growth could be the underinvestment described on page 8. Findings from a 2017 USAID study suggest renovation and rehabilitation could increase productivity by 13%.

Commodity Yield Index: 1966-2016 *(Coffee & Corn)*



Potential Impact Of R&R On Supply



NOTES:

Sources: USAID Country Data Sheets for Coffee Renovation and Rehabilitation; FAOSTAT

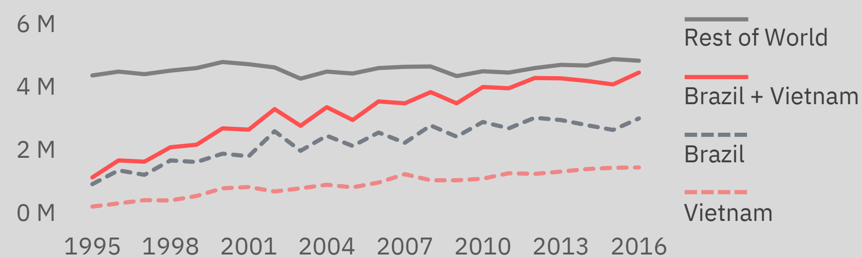
COFFEE PRICES HAVE FALLEN IN REAL TERMS DESPITE LIMITED PRODUCTIVITY GAINS

Brazil and Vietnam have accounted for virtually all of the growth in global coffee production in the last two decades. Rapid production growth out of those two countries along with the devaluation of the Brazilian real[1] have put pressure on global coffee prices.

ICO Composite Indicator Price (US cents)

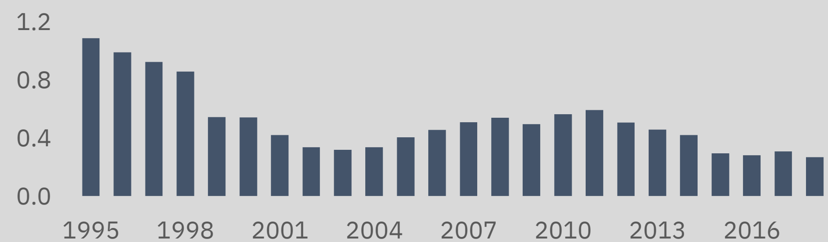
Production out of Brazil and Vietnam has surged

Green coffee production (tonnes): 1995-2016



The Brazilian Real has devalued relative to the dollar

USD/BRL foreign exchange rate



NOTES:

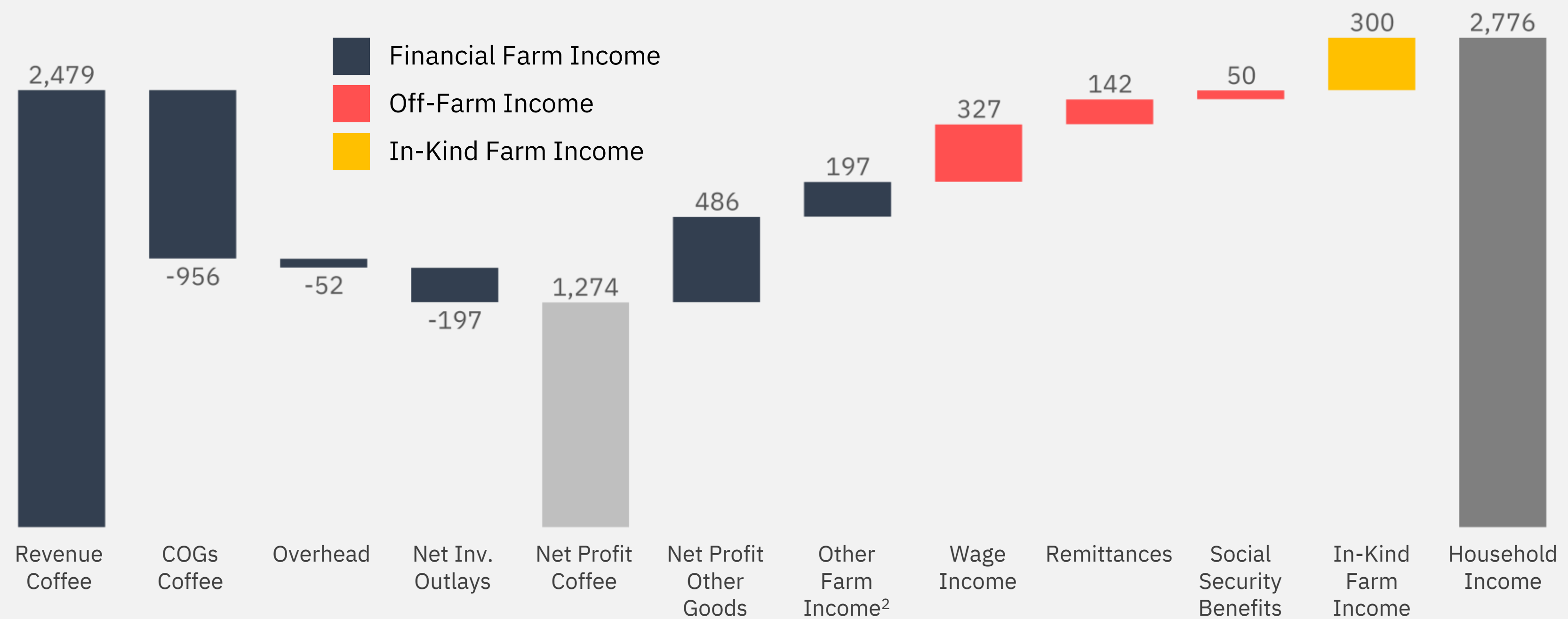
Sources: ICO; FAOSTAT; FRED

1. Coffee contracts are traded in US dollars. When the BRL weakens more than other coffee producers' currencies, Brazilian producers are able to collect relatively more local currency than their competitors for each unit of production.

SHF HOUSEHOLD INCOME IS NEAR THE POVERTY LINE IN MANY COFFEE PRODUCING COUNTRIES

Household income is a data point that most clearly reflects the need for sustainability in the sector. Studies by True Price and FairTrade have discovered that SHF household incomes are near the poverty line in their respective countries and are heavily reliant on coffee farm income.

Distribution of Coffee Farmer Household Income[1]



NOTES:

Sources: True Price – Assessing coffee farmer household income

1. Fairtrade Premium projects are not included in the household income.
2. Only 25% of the farms receive financial income from other farms. For the farms that do receive financial income from other farms, this consists of 23% of their total farmer household income.

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DEFINING SUSTAINABILITY IN THE COFFEE SECTOR

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THE UNITED NATIONS SUSTAINABILE DEVELOPMENT GOALS ARE A COMMON REFERENCE

The United Nation's Sustainable Development Goals for 2030 are a common reference for social activists looking to broadly define sustainability and benchmark success.

United Nations Sustainable Development Goals

NOTES:

Sources: United Nations Sustainable Development Goals

COFFEE STAKEHOLDERS HAVE ATTEMPTED TO DEFINE SUSTAINABILITY IN THE COFFEE SECTOR

In 2017, the Global Coffee Platform and Sustainable Coffee Challenge jointly developed and launched a ‘Sustainability Framework’ for the sector, intended to create a new and common language to navigate coffee sustainability (outlined below).

Common Outcomes From The Coffee Sustainability Framework

Outcome	Early Targets	Late Targets
Improve Livelihoods	• Increased growth capacity for farmers • Improved access to potable water • Improved labor practices	• Equitable distribution of income throughout supply chain • Increased diversification of production • Increased % of workers on living wage • Increased representation of women & youth
Sustain Supply	• Improved efficiency and quality • Increased adoption of good agricultural practices	• Improved farm income • Increased farm resiliency • Optimized coffee productivity (yield)
Strengthen Market Demand	• Increased purchases of sustainable coffee • Improved market access	• Improved farm income
Conserve Nature	• Increased adoption of conservation practices • Increased area under conservation mgmt.	• Improved water quality • Improved water use efficiency • Reduced greenhouse gas emissions • Reduced risk of deforestation

NOTES:

Sources: Sustainability Progress Framework, Version 2.0 – 2017

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INTRODUCTION TO COFFEE SUSTAINABILITY PROGRAMS

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COFFEE SUSTAINABILITY PROGRAMS FALL INTO THE CATEGORIES OF THE SUSTAINABILITY SUPPLY CHAIN

Voluntary Sustainability Standards

Suppliers enroll in VSS programs to gain access to buyers who are willing to pay premiums for sustainable coffee

Multi-Stakeholder Initiatives

Value chain participants collaborate to drive change in response to sustainability threats to part of the value chain

A sustainability issue exists

Researchers identify the sustainability issue

Consumers groups demand responsibly sourced coffee

New sustainable coffee certifications are created in response to consumer demand

Which incentivizes buyers to source sustainably

And growers to grow sustainably

The coffee value chain is threatened

Value chain participants are incentivized to attempt a solution

If a solution is not economically feasible, social activist groups are involved

Positive sustainability outcomes are measured and reported

NOTES:

1. This diagram is for indicative purposes only and does not completely reflect the complex coffee sustainability landscape.

Sources: Moon Island

COFFEE RESEARCH IDENTIFIES SUSTAINABILITY ISSUES

Coffee sustainability researchers have the important role of diagnosing sustainability issues with the highest degree of academic integrity. Flawed diagnosis of sustainability issues mis-informs implementation projects – leading to wasted effort and, in some cases, deteriorated sustainability.

Case Example: USAID Renovation Study

USAID FROM THE AMERICAN PEOPLE

"USAID is the world's premier international development agency and a catalytic actor driving development results."

USAID's 2017 study on renovation needs by producing country ...

- Gives coffee sector stakeholders an overview of how countries' needs and priorities differ
- Helps identify what type of SHF R&R action is needed in different countries
- Focuses on SHFs need for R&R in countries, as larger farmers are more able to self-finance R&R

Case Example: Enveritas Smallholder Farmer Data Collection

E

"Enveritas is a non-profit founded in 2016 to overcome systemic barriers that prevent the application of proven solutions for ending poverty among smallholder coffee growers."

Enveritas' ongoing study on smallholder farmer attributes ...

- Will provide information about total coffee farmer population, farm size and yield distributions for the countries included
- Uses geospatial data and on-farm observations
- Focuses on smallholder producers that lack access to sustainability programs

NOTES:

Sources: USAID; Enveritas

VOLUNTARY SUSTAINABILITY STANDARDS ARE A DEMAND-DRIVEN APPROACH TO COFFEE SUSTAINABILITY

VSS certifications ask consumers to pay more for their coffee, playing on the social perspective that profits should be more equally distributed throughout the coffee supply chain.

Voluntary Sustainability Standards Certification Matrix

Certification	2018 Volume Sold (MT)	2018 Volume Certified (MT)	Traceability	Price Benefits	Countries of Consumption
Fair Trade Certified	192K	560K	YES – Roaster to Producer	Minimum price of $1.40/lb.	US, Canada, EU, Japan, AUS, NZ
Organic	160K	370K	YES – Retailer to Producer	Organic Premiums	US, Canada, EU, Russia, Japan
4C Common Code	536K	2,365K	YES – 4C Unit to Producer	None	Undefined
UTZ[1]	365K	859K	YES – Roaster to Producer	Negotiated	US, UK, EU, Australia
Rainforest Alliance[1]	230K	558K	YES – Roaster to Producer	Negotiated	44 Countries on 6 Continents

NOTES:

1. UTZ and Rainforest Alliance announced a merger in 2018 and will finalize new standards in 2020.

Sources: 2018 Coffee Barometer; Sustainable Coffee Certifications Matrix

MULTI-STAKEHOLDER INITIATIVES ARE A VALUE CHAIN-DRIVEN APPROACH TO SUSTAINABILITY

Multi-stakeholder initiatives are a collaboration between value chain actors and non-value chain sustainability stakeholders to solve issues that directly threaten the coffee value chain.

When part of the coffee value chain is threatened …

Farmers organize into co-operatives

Lenders provide capital to farmers

Farmers buy inputs from suppliers

Farmers raise crop and sell to traders

Traders coordinate orders to roasters

Roasters roast beans and sell to retailers

Retailers sell packaged coffee to customers

Value chain actors are incentivized to help

If access to capital restricts the supply of coffee causing green coffee prices to rise, input costs for buyers could rise so much that it actually becomes economically beneficial for them to provide cheap loans to farmers

Alongside sustainability stakeholders

Root Capital – a small impact investor offering loans to SHFs – and other NGOs focused on sustainable development in the coffee sector target value chain issues that would be unfeasible for value chain participants to tackle.

NOTES:

Sources:

IT'S UP TO SUSTAINABILITY PROGRAMS TO ACCURATELY MEASURE AND REPORT THEIR IMPACT

To demonstrate the sector's effectiveness in achieving sustainability gains, stakeholders must define key performance indicators (KPIs) that progress toward a sustainability goal. Identifying those specific measures and their relative importance is an ongoing debate.

Common Measures From The Coffee Sustainability Framework[1]

Improve Livelihoods	Sustain Supply	Strengthen Market Demand	Conserve Nature
• # of farmers / households reached (by age, gender, etc.) • # of workers trained on labor rights • # of farmers with diversified income	• % yield increase • % of production using sustainable growing methods • # of farms with improved infrastructure (wells, mills, etc.) • # of total hectares under coffee production • # of farmers trained	• Average price premiums achieved for participating farmers • Volume of certified coffee sold	• # of farmers trained on environmental management practices • # of farmers participating in conservation programs • # of coops with natural resource management plans • # of hectares managed by farmers in sustainability programs

NOTES:

1. Sustainability KPIs depend on the goal of the sustainability program.

Sources: IDH; Sustainability Progress Framework, Version 2.0 – 2017

A MOON ISLAND PROJECT

The World Coffee Analytics program is coordinated by **Moon Island.**

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Have cool project ideas? Email me at joey@moonisland.com.