



**WORLD COFFEETM
RESEARCH**

Ensuring the future of coffee

The WCR Global Coffee Monitoring Program

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World Coffee Research's Mission

To grow, protect, and enhance supplies of quality coffee while improving the livelihoods of the families who produce it.



COFFEE IS AT RISK

The livelihoods of coffee farmers and the businesses who rely on these farmers to grow great coffee are urgently threatened by:

Climate Change

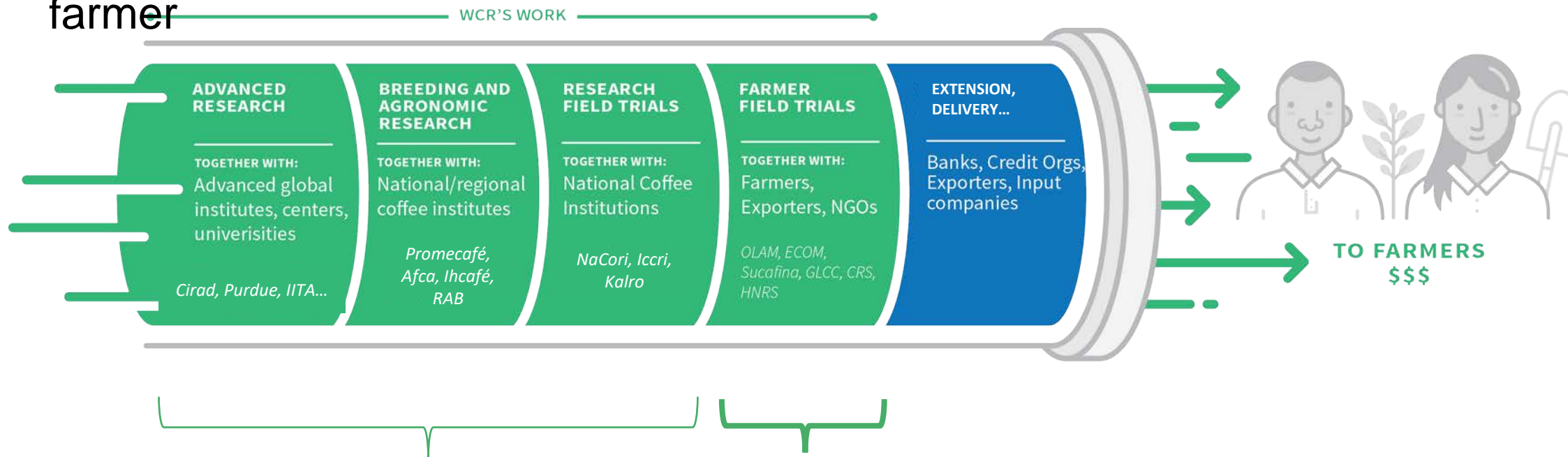
Low Yields

Diseases & Pests

Barriers to Quality

Partner purposefully with the private and public sector

A technology pipeline: Delivering profitable technologies all the way to the farmer



Build on existing advanced + applied research partnerships to accelerate results for farmers

Major focus in 2018-2022

10-12 private sector partners in each focus country, capable of reaching tens or hundreds of thousands of farmers

Delivered in the first 5 years—advanced genetics program



Global breeding program using advanced genetic research and new diversity sources



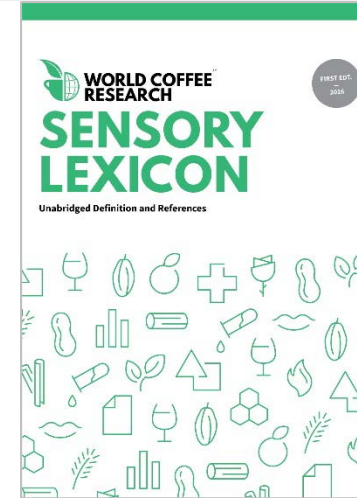
Created **60** new **F1** hybrids in test phase in **2** countries



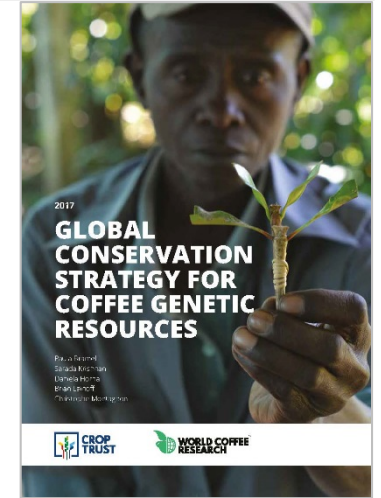
Developed and released highly diverse CORE population for breeding



Partnerships with **10** producing country breeding organizations



Developed new industry Sensory Lexicon to orient breeding work to quality



Developed Global Genetic Resource Conservation Plan

Delivered in the first 5 years—seeding a seed sector



Created the first global standard to certify that coffee seed producers and nurseries are producing healthy and genetically pure plants.

Impact: **Millions of healthier trees** to farmers over the next decade. Supports continuous breeding and the delivery of new varieties to farmers worldwide.

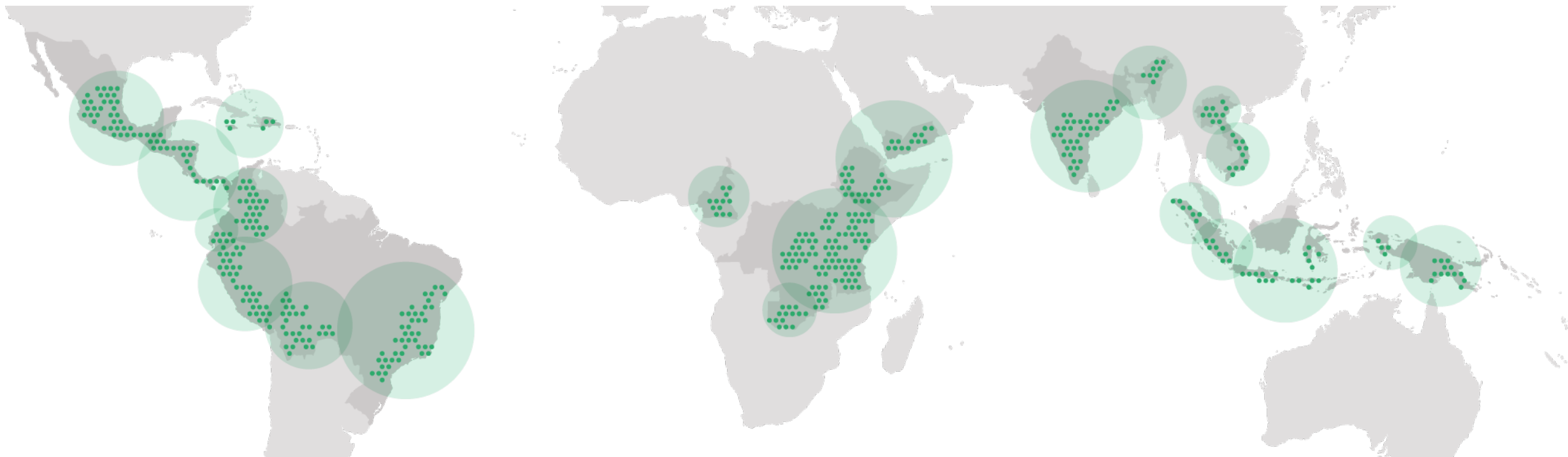
Unprecedented resources for farmers, agronomists, + countries, including the first-ever variety catalog

- Arabica Coffee Varieties: **>50,000** people reached in 9 countries
- Managing coffee leaf rust manuals: **>26,000** people reached
- Global climate prediction data on coffee suitability

Global Coffee Monitoring Program



The Global Coffee Monitoring Program (GCMP) is a network of hundreds of On-Farm Technology Trials (OFTTs)...



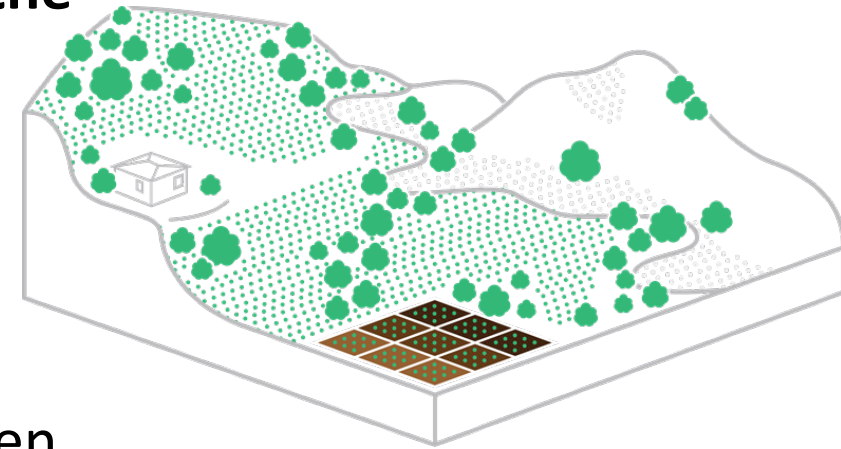
...to evaluate the impact of renovating with improved varieties and more profitable agronomy practices.

Large-scale demonstration of the effects of new technologies on farmer **PROFIT**

- Trial is **sufficiently large** enough to determine farmer **profit**
- Not only extra-yield but also extra cost (including labor): **Cost-benefit analysis**
- Farmers and industry can take the **information and figures to the bank**

Risk-free

- Program will provide **validated coffee varieties and practices**
- farmer may receive cash equivalent of lost income for area taken out of production for two or three years



Focusing on varieties and realistic and profitable treatments

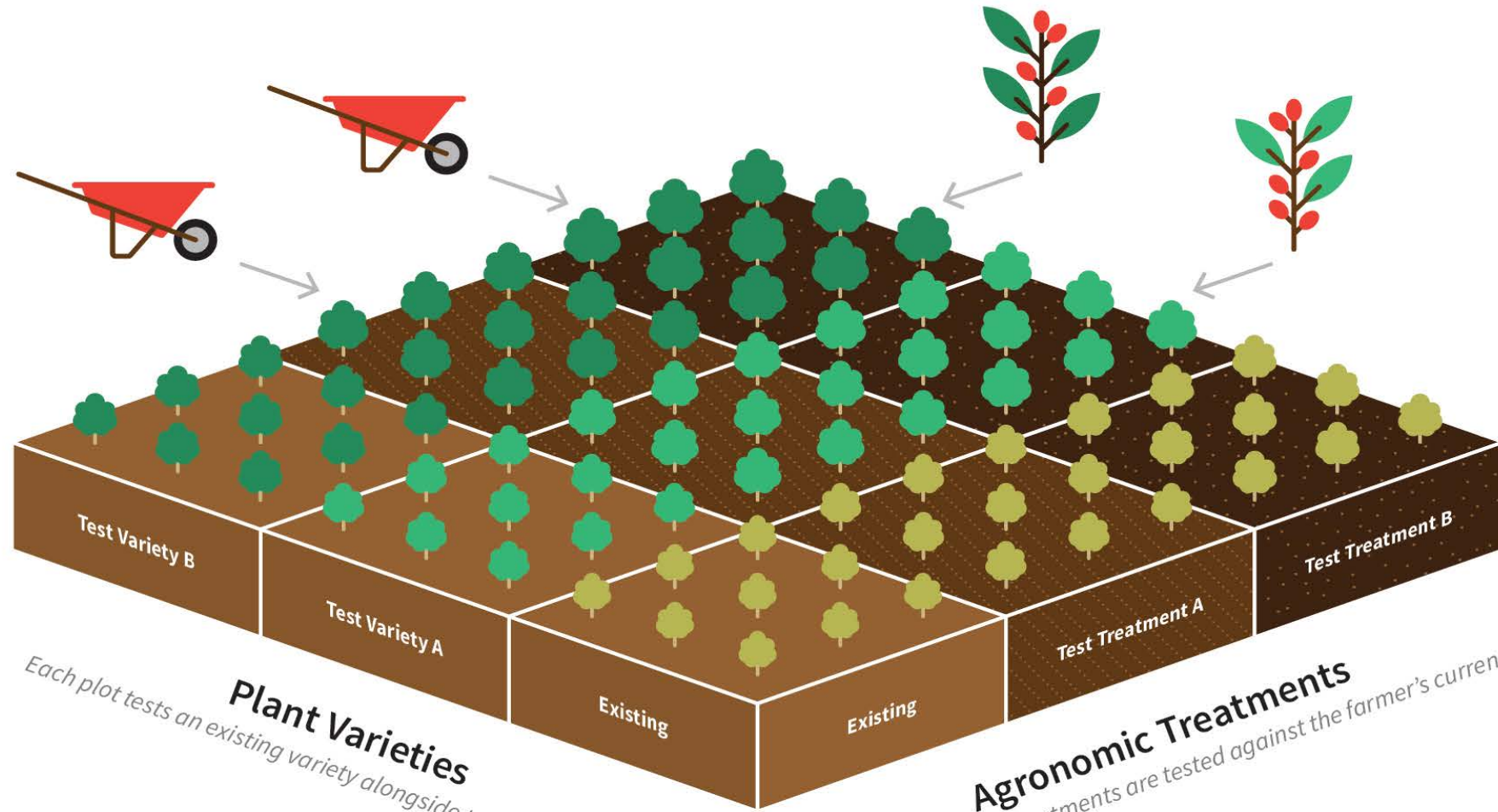


- Farmer's most important **assets: coffee plants and soils**
- Often, **Outdated Varieties** and **depleted soils** are.
- Sooner or later: **downward production spiral**.
- Coffee unattractive: , farmers eventually **leave coffee farming** altogether.

- **Adoption of improved varieties and profitable agronomy practices** can substantively **increase a farm's profitability, keeping farmers in coffee**.



OFTT Design



Plant Varieties
Each plot tests an existing variety alongside two new varieties.

Agronomic Treatments
Two improved agronomic treatments are tested against the farmer's current practice.



Farm and OFTT Characteristics

Capturing diversity

- Diversity of **countries / regions**
- Diversity of **farming systems**
 - Farm type: smallholder to large-scale producer
 - Elevation
 - Topography

Size of OFTTs

- 1000m² - 5000m² (also 500m²)
- Easy access in all seasons



Selection of Coffee Varieties for OFTTs



- *Control varieties*
 - typically or currently used in farms
- *National varieties*
 - selected from validated best performing national varieties
- *Regional varieties*
 - Validated and most promising in the region (i.e., Batian in East Africa).

Examples of Varieties Used in OFTTs



Country	Existing Variety	National Variety	Regional Variety
El Salvador	Borbón	Marsellesa	H Centroamerica
Nicaragua	Caturra	CR-95	Starmaya
Rwanda	BM 139	RAB C 15	Batian
UGANDA	Bugisu/SL 14	SL14/SL28	BATIAN

Determining Agronomic Treatments (part 1)

1. Workshop of Coffee Agronomy Specialists
 - Define and describe major coffee **farm types**
 - Determine the unique **challenges and limitations** of each type
 - Recommend **improved practices** to improve yield and profitability



Determining Agronomic Treatments (part 2)

2. Partners and farmers select from a menu of realistic agronomic treatment options that:

- are appropriate for the type of farm
- address limitations
- Farmers and partners are interested in
- Farmers would continue after the trial

Some Examples:

1. Improved Planting	2. Shade Management	3. Soil Conservation	4. Fertilizer Efficiency
Density/Spacing	Permanent shade (species and density)	Intercropping with annuals in first years	Dose, frequency and type of fertilizer
Size of holes		Cover crops	Dose, frequency of compost
Soil amendments		Vegetative barriers along contours	Fertilize based on soil analysis
Early temporary shade			Adjust pH of soil



Examples of Agronomic Treatments



WCR Country Agronomist

A WCR agronomist for each country in that region



Partner Agronomist

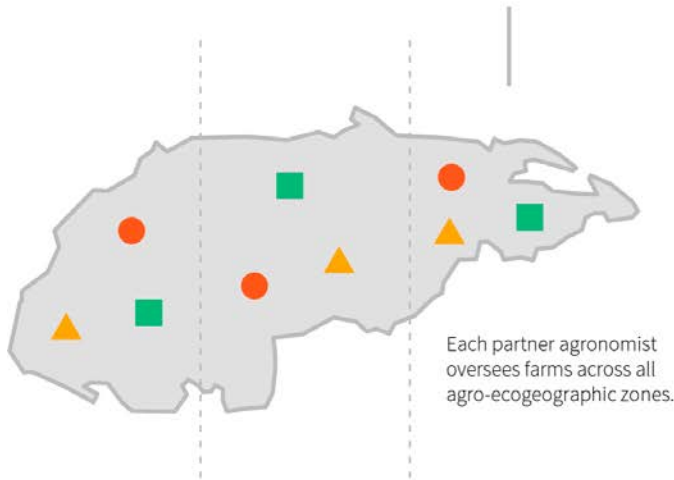


Partner Agronomist

Three supply chain partner agronomists for each country



Partner Agronomist



Coffee Farmer

People, Partners and roles

WCR oversees scientific design, manages and coordinates trial, analyzes and presents global data.

Partners: (National Coffee Institutions, roasters, exporters, NGOs, etc.) sponsor trials on farms in their own sourcing regions and, when possible, their own supply chains.

Partner Agronomists execute trials and collect data.

Farmers carryout daily activities and participate in data collection.

Training and Communication with Partner Agronomists



WhatsApp
Groups to
communicate,
ask and share



Standardized Data Collection

- Basic farm characteristics
- GPS location
- Socioeconomic data
- Annual soil analysis and pH
- Daily Temperature and Rainfall
- Field Operations (labor, inputs)
- Early vegetative growth
- Pest and disease
- Yield
- Quality



Example of OFTT Partners



Country	Partners
El Salvador	ABECAFE
Nicaragua	ECOM, CRS, MERCON
Guatemala	H.R. Neumann, ANACAFE, FECCEG
Costa Rica	ECOM, Beneficiadora Santa Eduvigessa
Puerto Rico	Puerto Rico Coffee Roasters
Rwanda	RWACOF (Sucafina), RWASHOSSCO, C. Dorman (ECOM), RTC, Sustainable Harvest, EWCA
Uganda	UGACOF (Sucafina), Great Lakes Coffee, KAWACOM (ECOM), IITA, HRNS

Estimate Number of New OFTTs per Country and Year

	2016	2017	2018	2019	2020	2021	2022	Total
El Salvador	3	4	13	15	7			44
Guatemala		7	14	10	9			40
Honduras		0	20	15	15			40
Costa Rica		3	13	12	12			40
Panama		0	10	15	15			40
Peru		0	10	15	15			40
Nicaragua		5	19	10	6			40
Rwanda			25	20	15	10		65
Burundi				15	10	10		35
Kenya				10	10	10	10	40
Tanzania				10	10	10	10	40
Uganda			20	10	10	10		50
DRC			15	15	15	15		60
Zambia				10	10	10	10	40
Malawi				5	5	5	5	20
Zimbabwe				5	10	10	5	30
Jamaica			5	10	15	10		40
Mexico			5	15	20	10		50
Puerto Rico			8	15	17			40
Colombia				15	15	15	15	60
Brazil				20	20	20	20	80
Dominican Republic				5	10	5		20
India				10	15	15	15	55
Indonesia			5	10	15	15	15	60
Laos				5	10	5		20
Vietnam				10	15	20		45
Total	3	19	169	307	326	205	105	1134

Benefits of Participating and Expected Outcomes





Lifting Profitability

Through rigorous monitoring of costs, labor inputs, and yield and price increases for farmers according to different farming systems, the trial will provide unparalleled data for improving farm profitability and helping farmers secure small loans.

Smarter Farming

This network of hundreds of scientifically designed plots will result in significant advances in knowledge about coffee variety performance, soil treatments, and farming practices.



Monitoring Platform

The trial will serve as a global monitoring platform to track the impact of climate change on the quality and production of coffee as well as the movement of diseases and pests around the world.



Global Benefit

For the coffee industry as a whole, the trial will accelerate the adoption of new varieties that are high quality, disease resistant, and higher yielding and will enable investment in large-scale renovation projects. This will provide an overall boost to the global supply of high quality coffee.



Thank you

