

# Forging the future of coffee



**WORLD COFFEE  
RESEARCH**



# Who We Are





World Coffee Research is **170+ companies in 29 countries** working together to drive global, collaborative R&D to ensure the future of coffee





WCR **enables the global coffee industry to invest** in innovation in coffee agriculture, recognizing that collective investment can generate transformational, generational impact on coffee production worldwide.

WE ARE A BRIDGE CONNECTING



**Farmers + National  
coffee programs**



**Roasters  
+ Industry**

Cutting-edge research advances our shared priorities



# Our team works from 17 countries across the globe



Flor Amarilla  
Research Farm  
El Salvador



Dr. Jennifer "Vern"  
Long, CEO



Dr. Tania Humphrey,  
Director of R&D







**We unleash the power of coffee varieties** to create a flourishing and sustainable future for farmers, consumers, and businesses.



Enhance productivity,  
climate-resilience, and  
farm profitability



Improve quality for  
different markets



Reduce supply  
chain risk

# Why We Exist





**Variety innovation gives farmers choices.** We envision the sector we want to build and co-create the varieties to take us there.



**Full-sun intensified  
system**

Variety choice is a  
critical part of  
sustainable  
agriculture



**Regenerative  
agroforestry systems**

*Different varieties  
thrive in different  
farming systems*



**Innovation matters.** But most coffee farmers are using varieties that haven't been updated in 50+ years.



Too many farmers have this.

But need this.



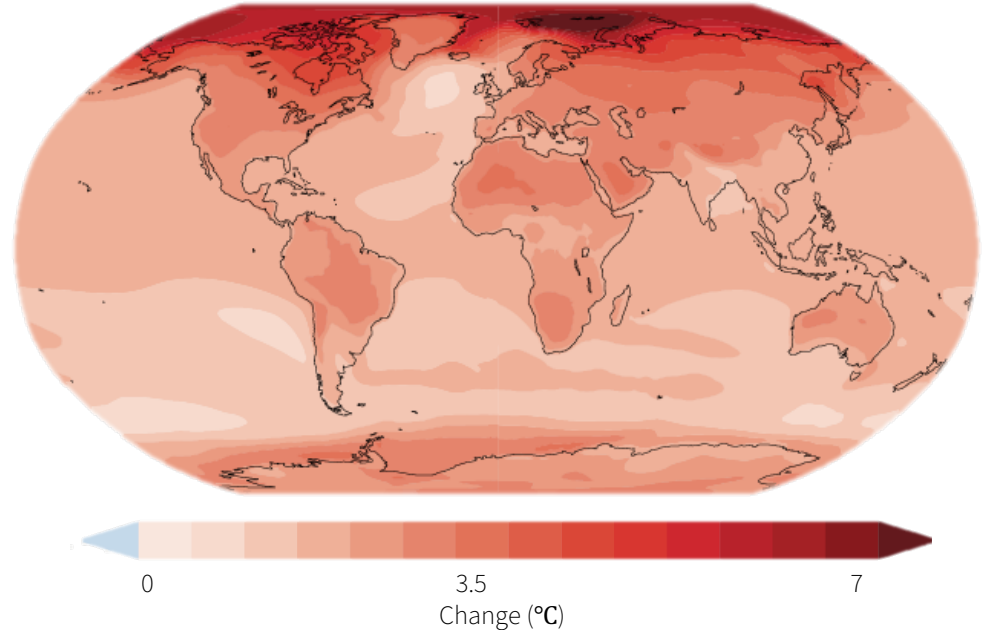
# Improved varieties are one of the most powerful tools we have to address the climate crisis

## What matters for coffee?

Current varieties are susceptible to high heat, unpredictable rain, and more extreme droughts, storms, heatwaves, frosts + increased disease

## What is the consequence?

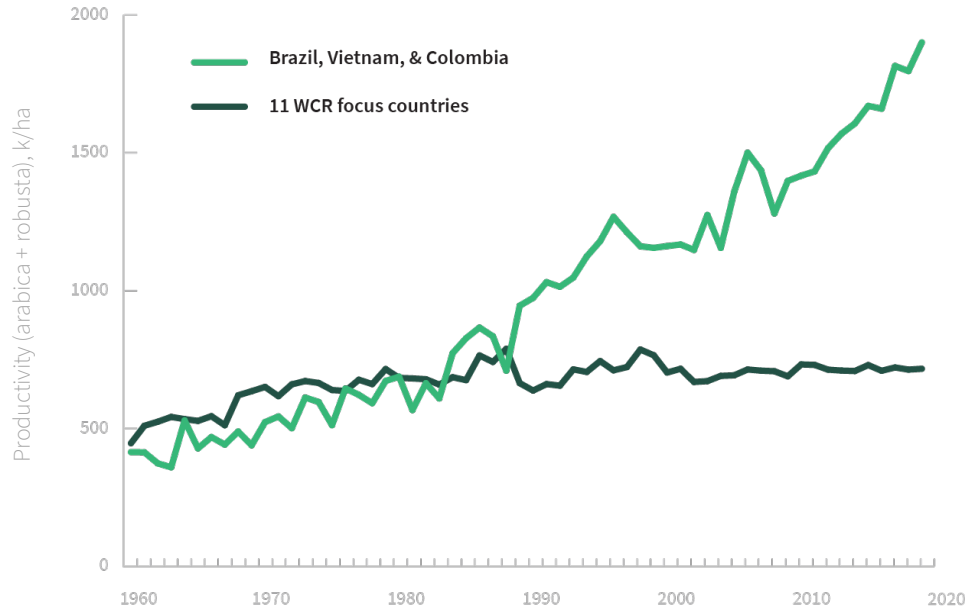
- Coffee availability + quality becomes unpredictable
- Increased cost of production and loss of financial resilience for farmers
- Risks to companies facing uncertain supply and increasing accountability for what happens in their supply chains



The world keeps getting hotter and more unpredictable—predicted global average temperatures at 2°C compared to 1850-1900

**Increasing productivity** will enable many producing countries to reduce pressure for deforestation and increase farmer income.

**COFFEE PER HECTARE (PRODUCTIVITY), 1960-2021<sup>2</sup>**



Climate change accelerates productivity disparities, **consolidating the world's coffee supply**. The consequences for farmers and the environment are huge.


**Today, just 3 countries produce over 60% of the world's coffee .<sup>1</sup> The rest of the world is struggling to keep up**

<sup>1</sup> International Coffee Organization trade statistics, 2021

<sup>2</sup> Chart data: FAOSTAT, 2022



Coffee R&D will deliver **choices for farmers** over the next decade as we bring **modern tools to accelerate** progress. We'll catch up!

 **111** coffee varieties  
registered in UPOV



There is 48x more innovation in  
apple breeding than in coffee

Source: International Union for the Protection of New  
Varieties of Plants (UPOV), Plant Variety Database

**Investing in innovation** catalyzes resilience and growth for the global coffee sector



GLOBAL COFFEE  
AGRICULTURAL R&D  
INVESTMENT GAP

**\$452**

MILLION/YEAR



Source: Coffee's Innovation Crisis, 2023



A woman with dark hair, wearing a white lab coat, is holding a small, clear glass jar with a white plastic lid. The jar contains a small green plant with several leaves, growing out of a dark, moist substrate. The background is a blurred laboratory setting with white equipment and shelves. The text "What R&D Makes Possible" is overlaid on the right side of the image in a white, serif font.

# What R&D Makes Possible



**Variety innovation delivers impact at scale, meaning it can benefit millions of farmers around the world.**

## HOW IT WORKS



Researchers create and tests new varieties

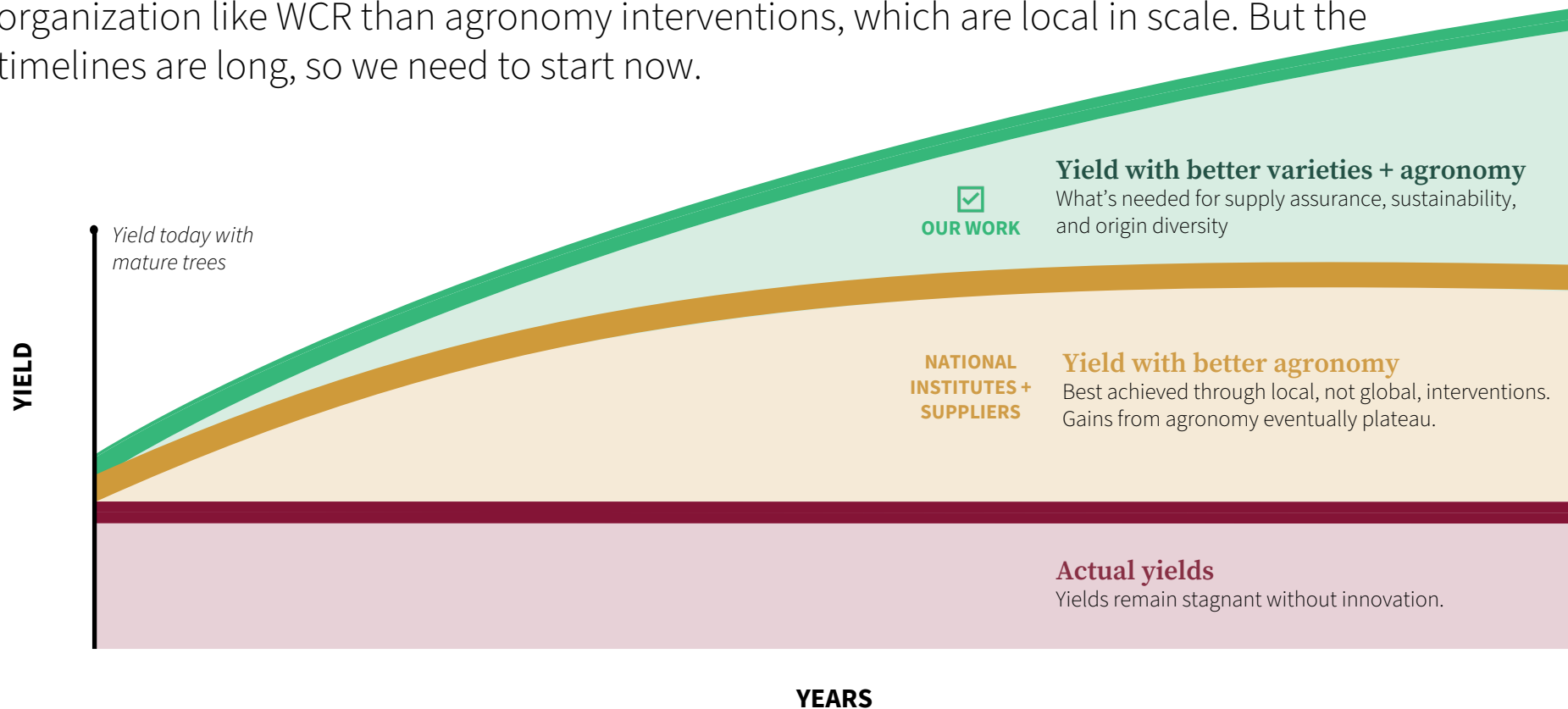


Effective seed sectors make them available to farmers



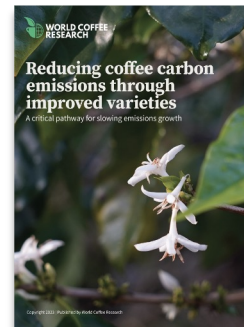
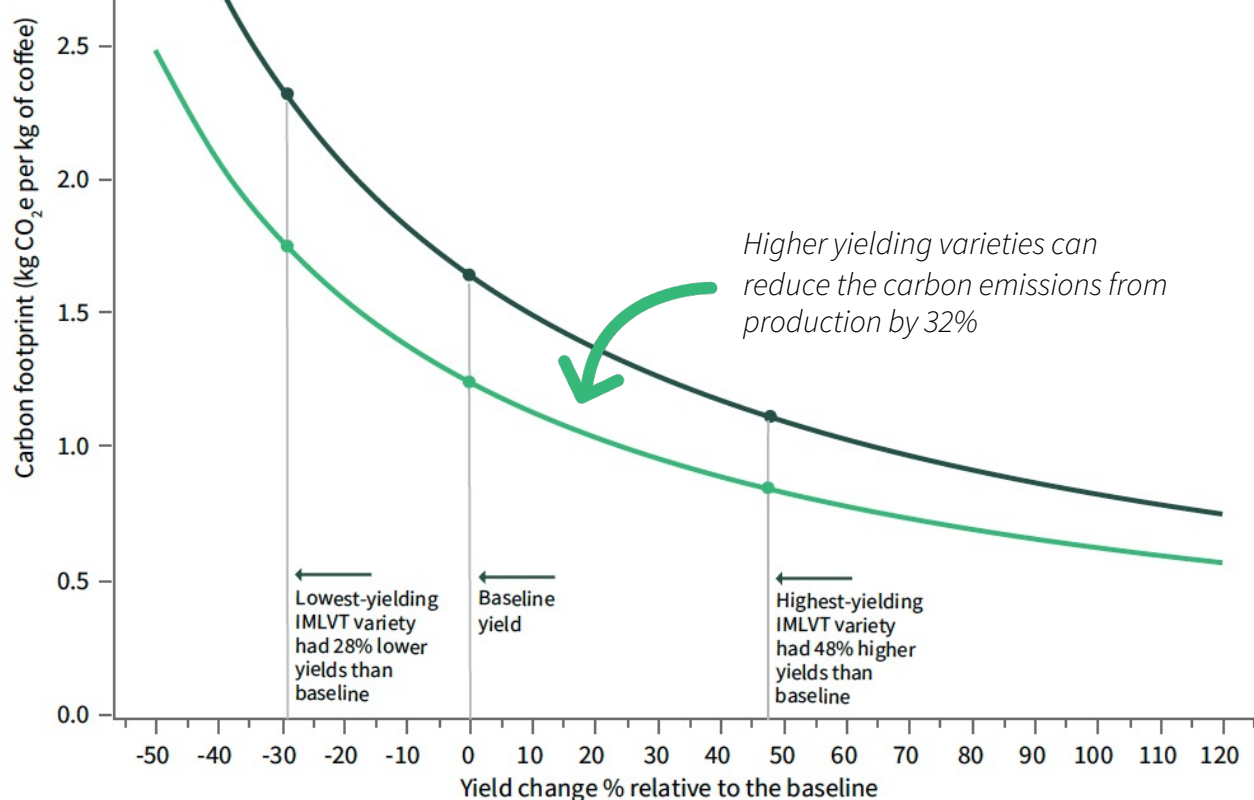
They are applied at the farm to increase quality, yields, and profitability

**Why varieties?** After you optimize agronomy, variety development is required to improve productivity. Variety innovation is a much more effective investment for a global organization like WCR than agronomy interventions, which are local in scale. But the timelines are long, so we need to start now.





Higher yielding varieties **reduce coffee's carbon footprint** and are a critical pathway for slowing emissions growth.



This impact is modeled using an improved carbon accounting method for coffee and real variety performance data coming from the world's largest arabica variety performance trial, with sites in 18 countries.

Improved varieties **enhance sustainability** and **reduce business risk** at the same time.



Tolerant to  
diseases and pests



High  
yielding



Climate  
resilient




Quality



Financial stability  
+ profitability



GHG  
emissions



Agrochemical  
use



Land use  
conversion/  
deforestation



# Research improves the goodness of coffee

How good it tastes, how good it is for the planet, and how good it is for people who grow it.

The research we conduct today will determine the future of coffee.



A close-up photograph of a person's hands planting small green seedlings into a tray of soil. The person is wearing a dark blue shirt and brown pants. The seedlings are small, with green leaves and thin stems, and are being planted into a light-colored, sandy soil. The background is blurred, showing more green foliage. The text "What We Do" is overlaid in the center of the image in a white, serif font.

# What We Do



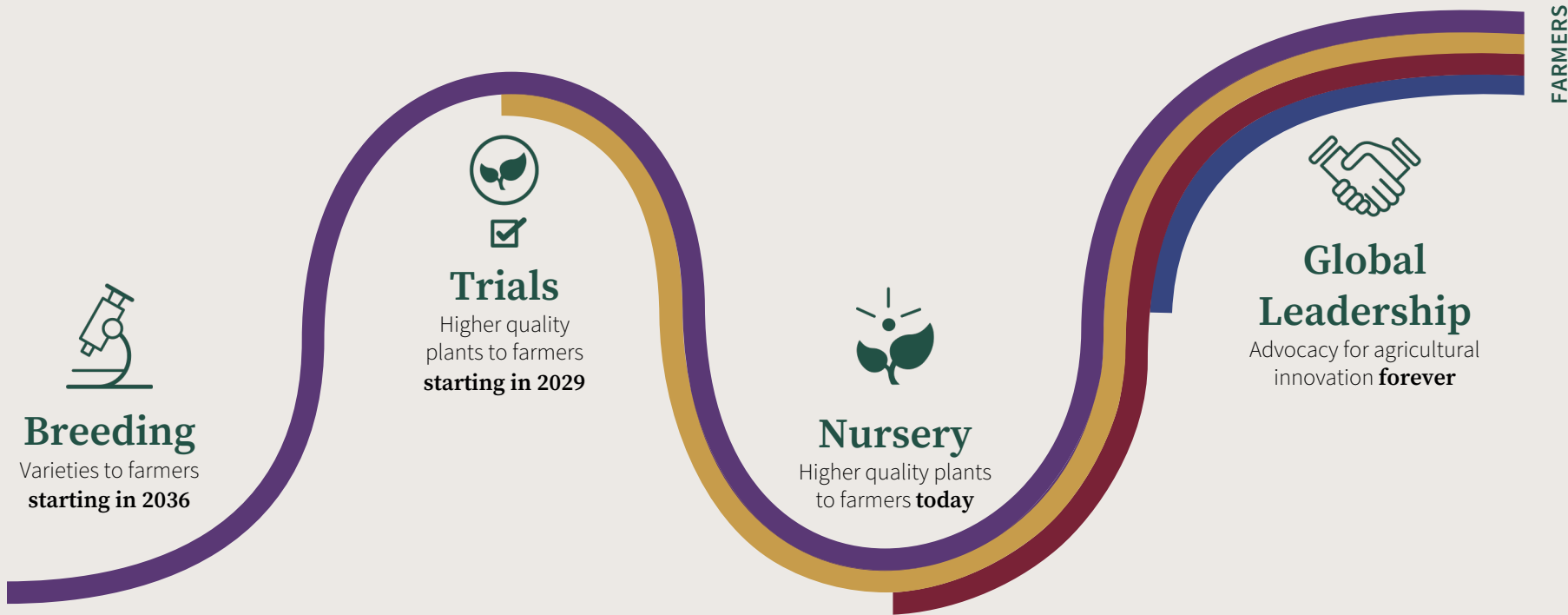
# Four integrated program areas to put the best coffee varieties into farmers' hands

1. Modern, demand-led global **coffee breeding**
2. **Trials**, evaluating & facilitating access to varieties
3. **Nursery and seed sector** strengthening
4. Global **advocacy** and alignment




# We deliver results—today and tomorrow

For a tree crop like coffee, it takes time for new innovations to be widely adopted by farmers. That's why our program areas are tailored to deliver short-, medium-, and long-term results.







50% of the world's 12.5 million family coffee farms

30% of global supply of coffee

To safeguard **origin diversity**, our work benefits countries critical for ensuring a **diverse supply** of coffee.

WCR executes high-value, applied research and engages industry and governments to **invest in innovation**

### Our direct work

#### INDUSTRY INVESTMENT

- Modern, demand-led breeding
- Global variety trials
- Nursery + seed sector strengthening

### Our advocacy

#### MOBILIZE \$\$\$ PUBLIC FUNDING

Increase global coffee R&D funding from consuming country governments to address bigger, broader challenges facing the coffee sector

### The future of coffee

#### SHARED INVESTMENT

Supply risk reduced, origin diversity and market differentiation secured, climate goals and sustainability targets met

# Breeding

## INNOVATIONS AND SYSTEMS

Using **modern breeding tools** and the **power of global collaboration**, our unparalleled breeding networks are transforming global coffee breeding and laying the foundation for the dawn of new opportunities in our industry.

- Arabica global network in 9 countries
- Robusta global network coming in 2024
- Modernizing Ethiopian national program

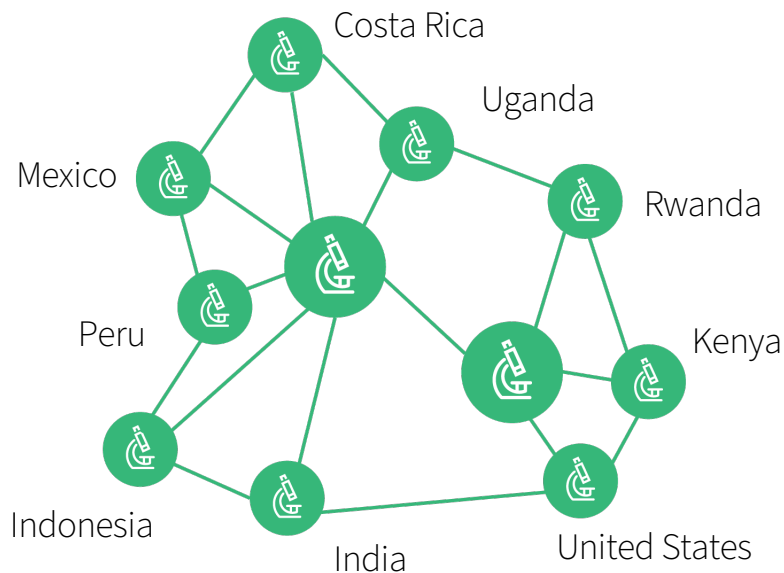
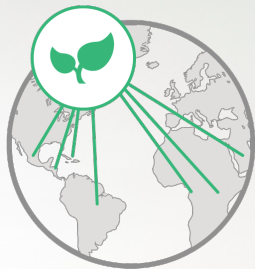


**2036**  
FIRST NEW  
VARIETIES TO  
FARMERS



# Innovea

## Global Coffee Breeding Network



- 5000 new + unique trees in 11 sites
- Global and collaborative (9 partner countries)
- Led by a world-class breeding team
- Global testing ensures climate resilient trees, tailored to local needs
- First new varieties reach farmers in 2036



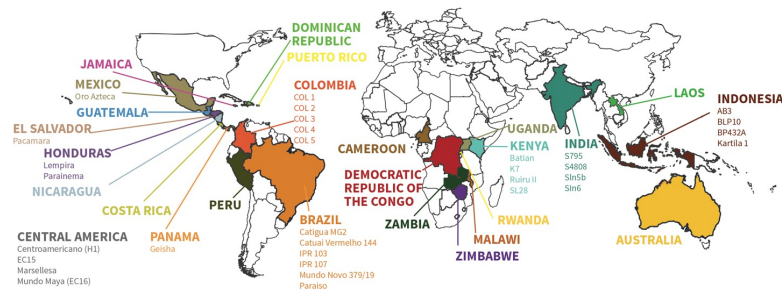
# Trials

FIELD PERFORMANCE AND QUALITY

Our trials **help countries evaluate and access the best current varieties.**

## International Multilocation Variety Trial

31 top varieties · 29 sites · 18 countries



**2029**  
IMPROVED  
VARIETIES TO  
FARMERS

**F1 hybrids** · 4 final candidates to field trials in 2024



# Nurseries

AND SEED VALUE CHAINS

**To make higher quality plants available to farmers today**, we strengthen seed systems, purify seed lots, and train nurseries.

New low-cost SNP markers for DNA fingerprinting of varieties + contract with a global provider = quality assurance



BETTER  
PLANTS TO  
FARMERS  
**TODAY**





# Global Leadership

**To drive our industry's global agenda forward and deliver shared value**, we foster collaboration, set priorities for global coffee R&D, produce open-access knowledge products, and advocate for increased public support and funding.

Our  
work

Our  
advocacy

The future  
of coffee

Our members leverage their collective power to ensure:

170+  
COMPANIES

A research portfolio that responds to industry needs

Farm productivity, profitability + climate resilience

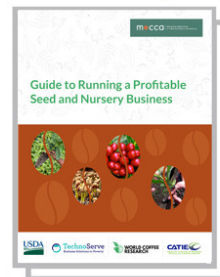
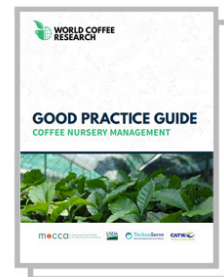
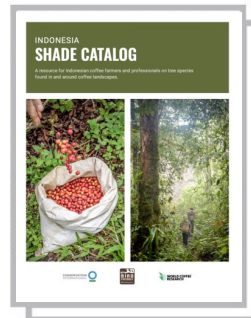
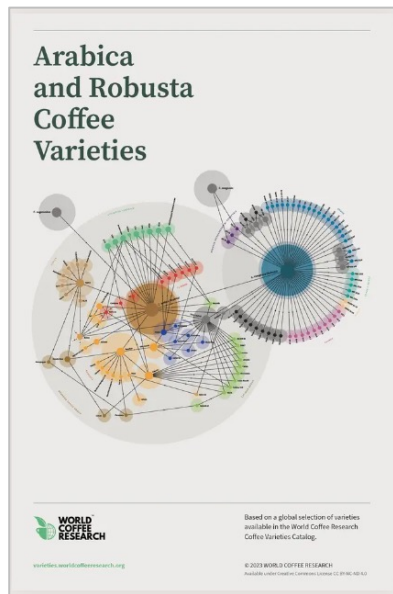
Secure, diverse supply

Quality

Unlocking increased public investment for shared priorities



# We produce free, open-access resources for farmers and industry



Our knowledge products have been accessed over **650,000** times from **99** countries

[worldcoffeeresearch.org/resources](https://worldcoffeeresearch.org/resources)





World Coffee Research unites the global coffee industry to drive science-based agricultural solutions to urgently secure a diverse and sustainable supply of quality coffee **today and for generations to come.**

Our **mission** is to grow, protect, and enhance supplies of quality coffee while improving the livelihoods of the families who produce it.