



Collaborative Coffee R&D Working Together to Secure the Future of Coffee in Hawai'i

Vern Long, CEO
May 20, 2022

Coffee's COVID

Source: Plucking the Tea, Ceylon, Museum of Photographic Arts







RAIN



Senate testimony on the 2018 Farm Bill

Steve Wellman, past president American Soybean Association, 3rd gen farmer

“ Thank you for the invitation to ... discuss science and innovation, which is the very essence of farming—today and especially into the future.

As I like to say, we need three things to get American agriculture growing: sun, rain and research.

There's not much I can do about the first two but when it comes to research I can lend my name, my time and most importantly my voice to policymakers encouraging them to renew American leadership in agricultural science.



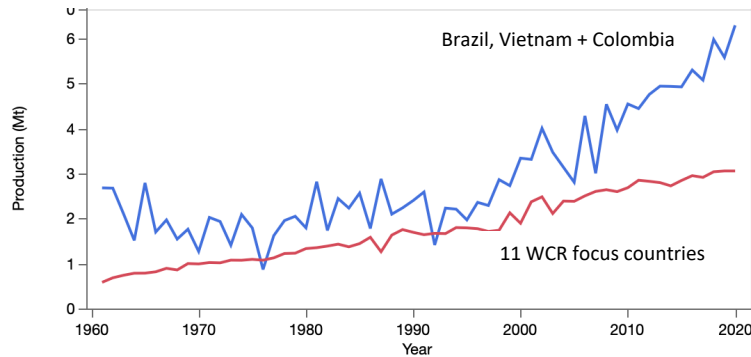


**We need varieties that
can stand the tests of the
21st century.**

**Planting the wrong
variety can have serious
economic consequences
....for decades**

Lack of innovation + climate change = huge supply risk

Coffee production, 1960-2021²

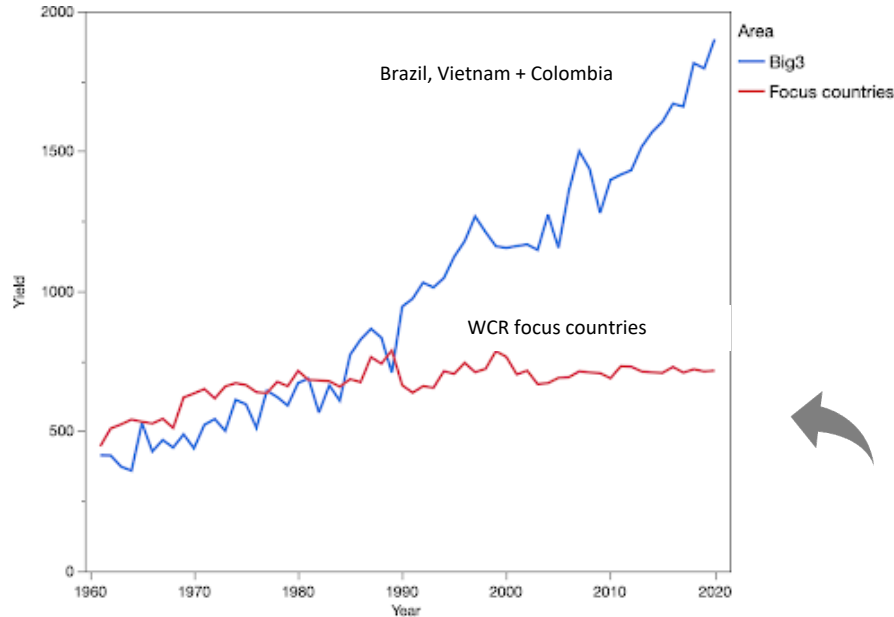


Today, just 3 countries produce over 60% of the world's coffee.¹

1. International Coffee Organization trade statistics, 2021
2. Chart data: FAOSTAT, 2022

Low productivity creates risk across supply chain

Coffee per hectare (productivity), 1960-2021²



Global supply increases come almost exclusively due to increasing productivity in **Brazil** and **Vietnam**.

Countries with low productivity must resort to converting land to coffee production in order to sustain supply.

We have a lot of catching up to do—coffee is one of the most under-researched and under-innovated crops in the world.



Varieties

6,640



11
1

= 59x more innovation in
strawberry breeding than
in coffee, despite coffee's
larger global value

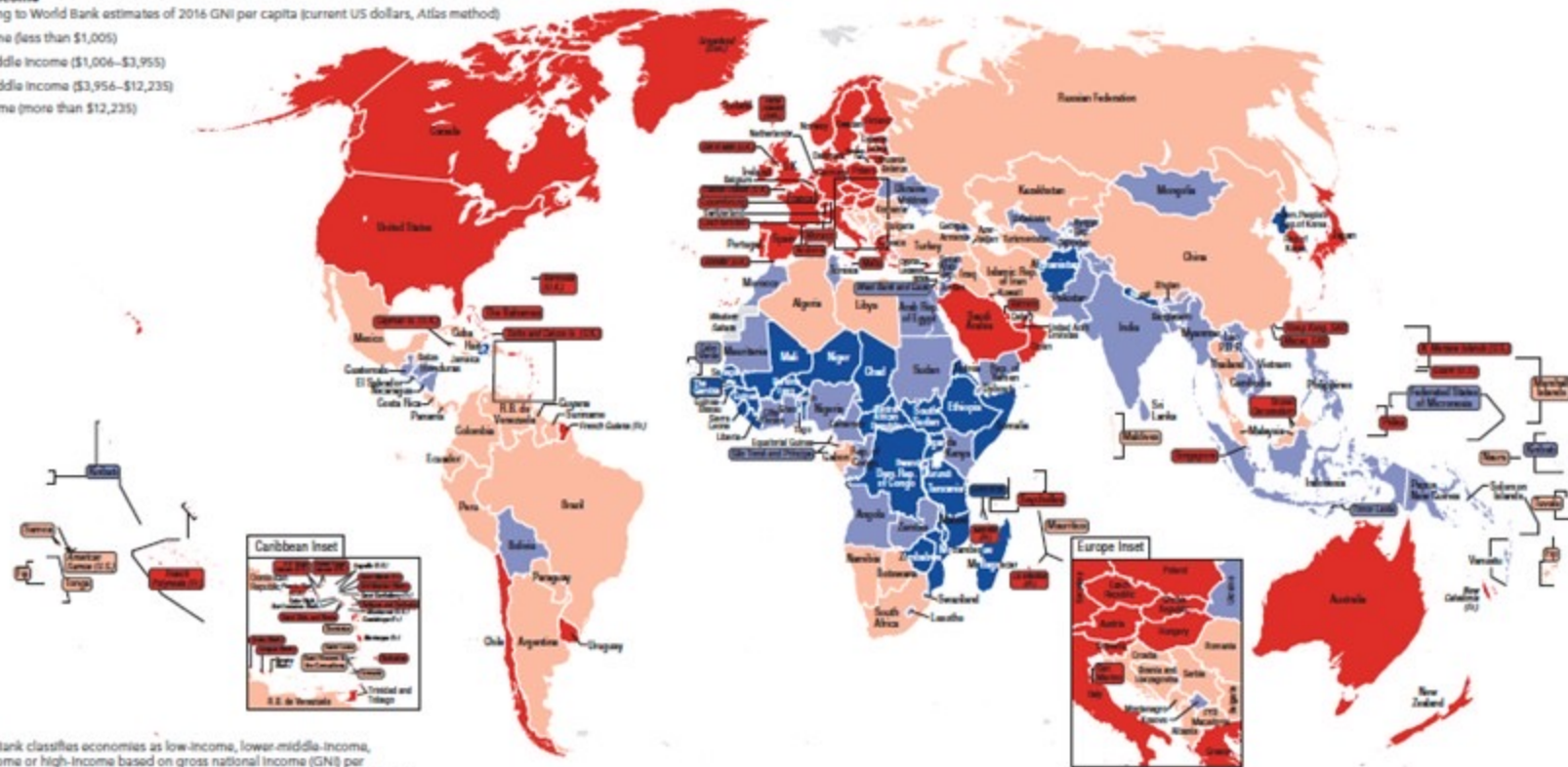


Global science investment

The world by income

Classified according to World Bank estimates of 2016 GNI per capita (current US dollars, Atlas method)

- Low income (less than \$1,005)
- Lower middle income (\$1,006–\$3,955)
- Upper middle income (\$3,956–\$12,235)
- High income (more than \$12,235)
- No data



Note: The World Bank classifies economies as low-income, lower-middle-income, upper-middle-income or high-income based on gross national income (GNI) per capita. For more information see <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.

Agricultural R&D spending and competitiveness

RANKING

Sort by A-Z 123

Brazil		1.82%
Caribbean, An...		1.77%
Chile		1.65%
Uruguay		1.40%
Argentina		1.29%
Costa Rica		1.06%
Mexico		1.05%
Bolivia		0.93%
Colombia		0.79%
Panama		0.74%
Nicaragua		0.38%
Peru		0.35%
Venezuela		0.31%
Dominican Rep.		0.30%
Paraguay		0.26%
Ecuador		0.18%
Honduras		0.17%
Guatemala		0.14%



Spending on agricultural research as a share of agricultural GDP (1-2% is target)

World Coffee Research **enables the global coffee industry to invest**



in collaborative innovation in coffee agriculture to transform coffee growing into a **profitable, sustainable livelihood** that can meet rising demand while also safeguarding natural resources

We Connect





WCR is a bridge
connecting ends of the value stream
and defining a shared vision



Farmers +
National programs



Roasters +
Industry



Agricultural R&D gives us the tools to create
the world we want to live in.

Tailored technology for farmer priorities



Our global innovation pipeline drives agricultural R&D to improve **profitability, climate resilience, efficiency**, and **quality**, working urgently across multiple time scales.

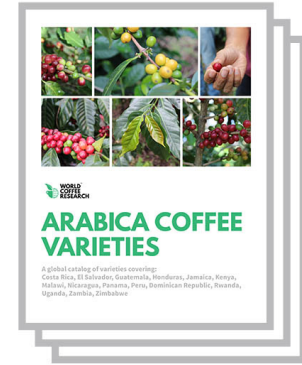
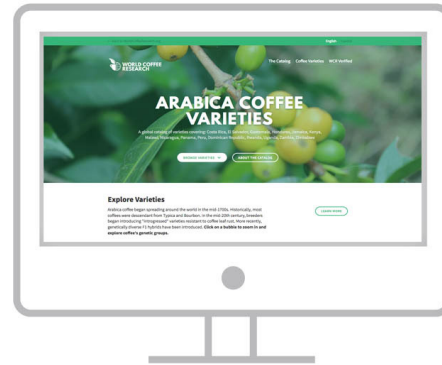


For a tree crop like coffee, it takes time for new innovations to be widely adopted by farmers. That's why we work in all segments of the research pipeline simultaneously.



Consolidating information about coffee varieties to close the knowledge gap for farmers and buyers ...

...we developed the first-ever global coffee variety catalog



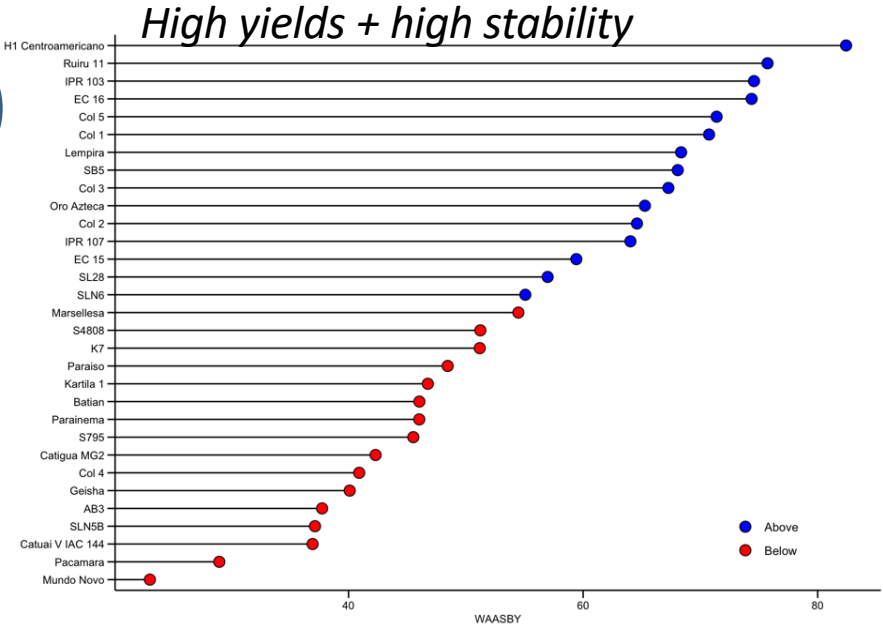
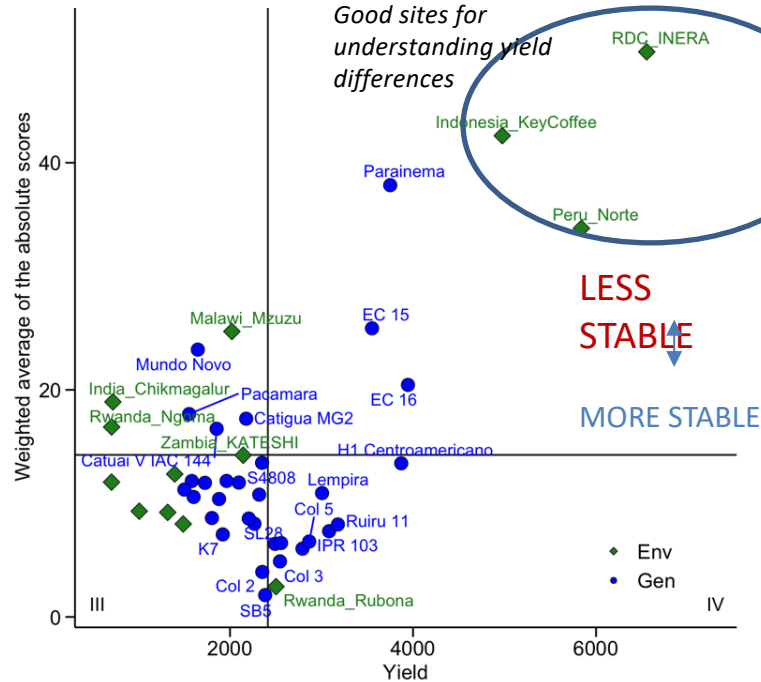
Online, free, open-source
varieties.worldcoffeeresearch.org

INTERNATIONAL MULTILOCATION VARIETY TRIAL



31 varieties x 17 environments around the world

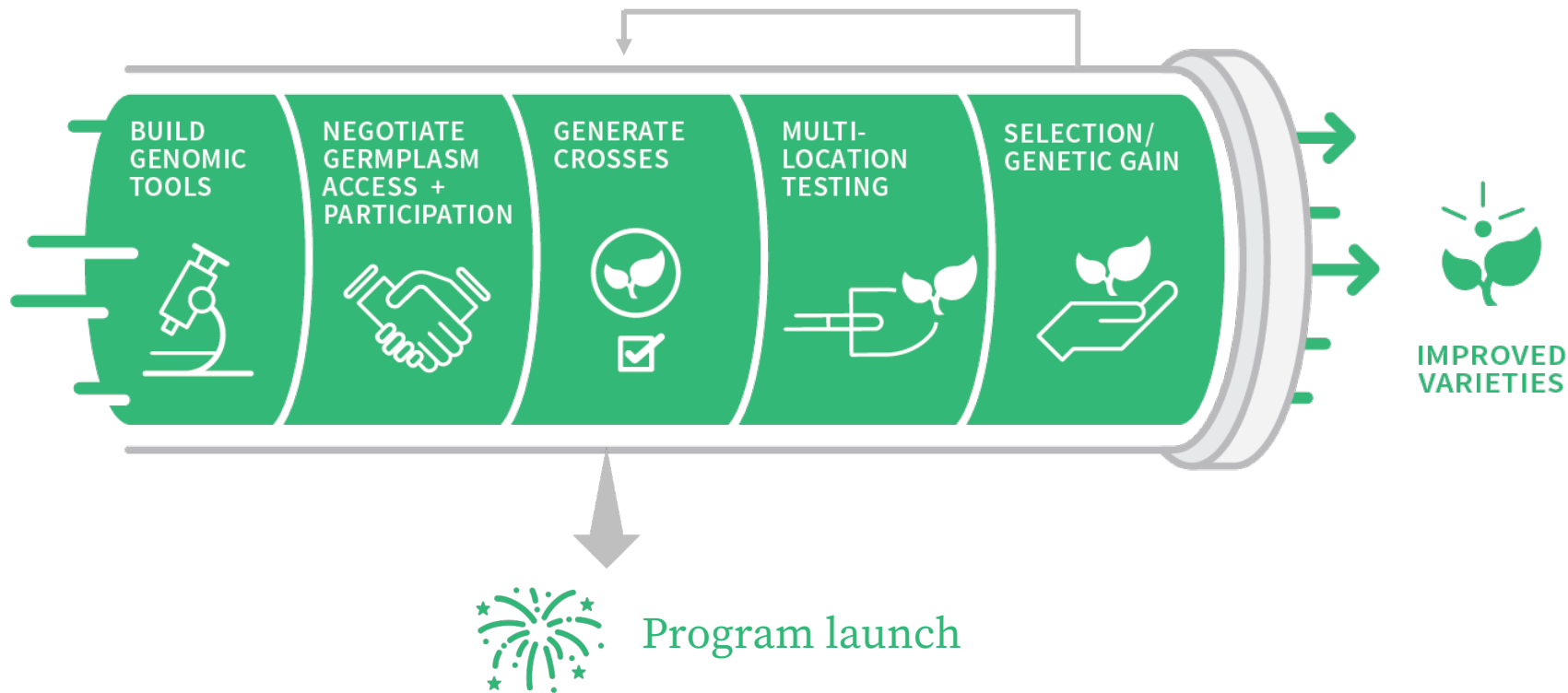
Variety stability



Example: H1 has ok stability, but doesn't have the highest yields in all places

Example: Ruiru 11 is very stable but has overall lower yields

Breeding program components



The stunning pace of progress when science is collaborative

FIGHTING THE PANDEMIC

Vasudev Bailey, PhD Zoe Guttendorf
@vasudevbailey @zoeguttendorf

Healthcare innovations to combat Covid-19

*Technological and scientific innovations in **diagnostics** to help identify positive cases, **treatments** to alleviate or cure, and **vaccines** to prevent potential future infections.*



DIAGNOSTICS

40 **41** 42

Regulatory authorized
diagnostic tests



TREATMENTS

22 **23** 24

Assets in human
clinical trials



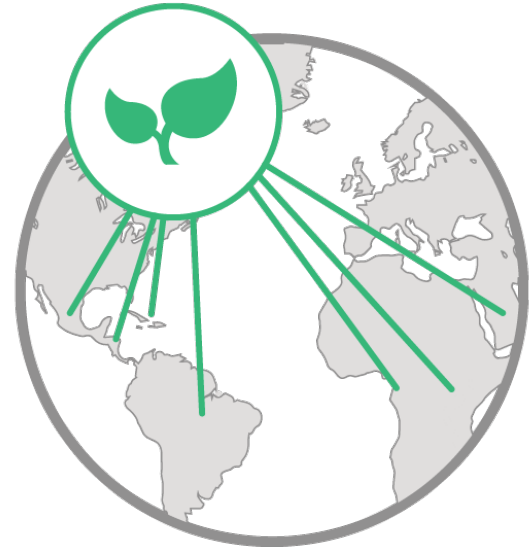
VACCINES

4 **5** 6

Assets in human
clinical trials

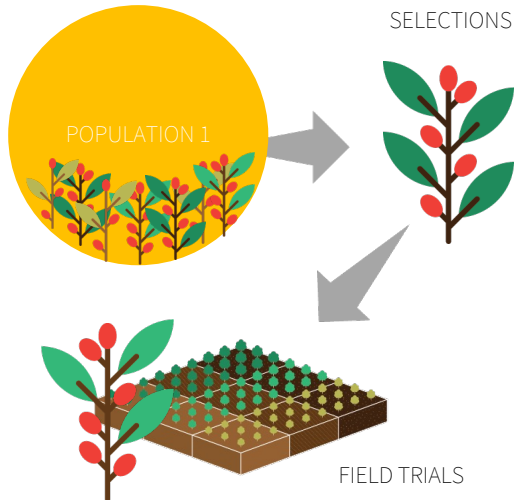
In only 26 months

**Launching 2022:
Coffee population
improvement network**



COOPETITION

Countries select their own materials for commercial release





Growing an advocacy agenda for 2022

MOBILIZE USDA

- Coffee R&D
- Build capacity

**Coffee Plant
Health Initiative
Amendments Act**

MOBILIZE USAID

- R&D Funding
- Include coffee

**Global Food
Security Act
Reauthorization**

WHAT'S NEXT?

- Farm Bill 2023
- Annual appropriations process



The U.S. Global Food Security Act

COFFEE FUELS AMERICA

- 1.6+ million jobs
- 189 million consumers
- \$225 billion in economic activity
- \$28 billion in tax revenue

SMALLHOLDERS FUEL SUPPLY

- 60% of global coffee supply grown by smallholders
- 100 million people rely on coffee for a living around the world



- WCR + NCA + Member Companies seek legislation to strengthen global coffee supply chains and support smallholders via R&D and technical support

WHY COFFEE CARES ABOUT

The Coffee Plant Health Initiative

CPHIAA, H.R. 5421, S. 2884

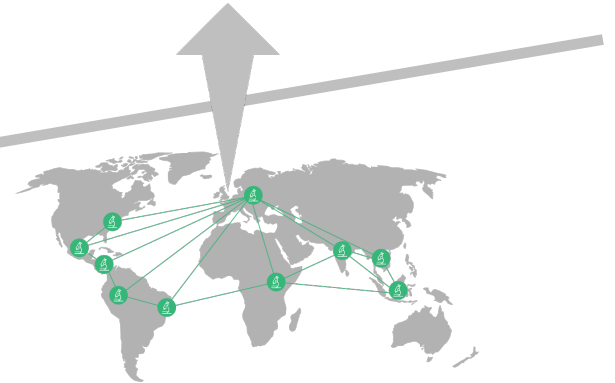


- Expands scope (current focus = only coffee berry borer) include all coffee pests and diseases
- Legislation introduced by Hawaiian delegation and pending
- Recipe for success!


190+ companies
in 25 countries



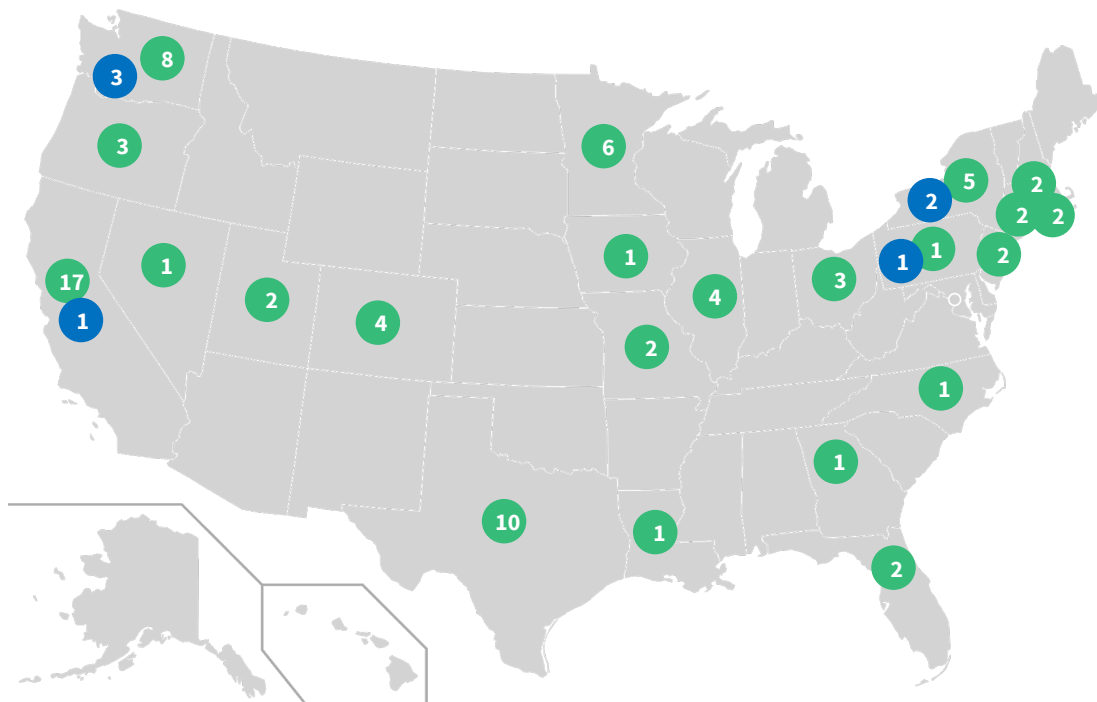
- 1 Mobilize public & private investment for global coffee R&D
- 2 Ensure portfolio's relevance to industry



MEMBERS ACROSS AMERICA

 **U.S. companies**
(81 total across 22 states)

 **Multinational companies** with
U.S. offices
(7 total)







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



**WORLD COFFEE
RESEARCH**

WCR is a 501c5 nonprofit organization