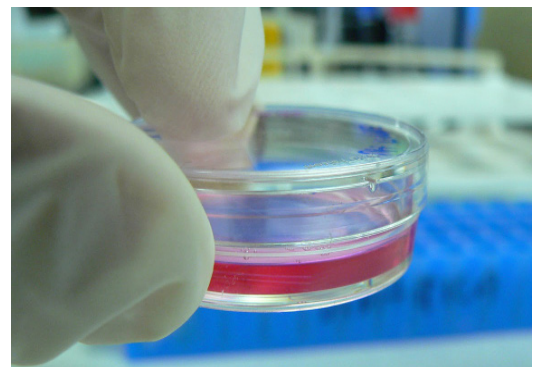


World Coffee Research

GLOBAL COFFEE R&D AWARENESS AND PRIORITIES CONSULTATION 2020



AGRICULTURAL R&D IN CONTEXT

Agricultural innovation is a primary driver of improved productivity and profitability, climate resilience and adaptation, and soil health and conservation among other critical factors. It contributes enormously to the economic viability of coffee farmers who adopt improved agricultural technologies and, as such, is a catalyst for the sustainability of the entire coffee sector.

Coffee has lagged behind other crops in realizing the potential that agricultural innovation can deliver, but also has the potential to take advantage of dramatic changes in the cost and sophistication of new technologies to leapfrog over years of disinvestment rapidly.

But there are many ways to focus agricultural R&D investments and research agendas, and there are many different types of organizations that engage in agricultural R&D—sometimes in coordinated fashion, and sometimes competitively.

GLOBAL CONSULTATION ON AWARENESS AND PRIORITIES

In order to better understand the awareness across the coffee sector of these efforts, and to better understand global and regional agricultural R&D priorities considering the perspectives of different value stream actors, as well as producing country national governments, World Coffee Research undertook a wide-ranging consultation of coffee sector participants in spring 2020. The consultation process consisted of 135 interviews with a wide range of stakeholders, as well as a survey distributed through our partners at coffee business associations (SCTA, SCA, BCA, NCA, and Deutscher Kaffeeverband) to roasting and supplier company representatives.



We identified four shared priorities across the global community of stakeholders we consulted.

FOUR GLOBAL PRIORITIES

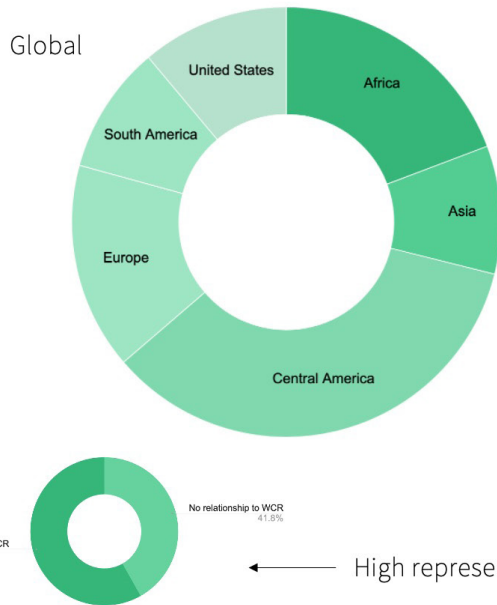
	Priorities	To whom does it matter most?
1	Farmer profitability as the lynchpin of sustainability	<ul style="list-style-type: none">• Everyone—farmers, countries, suppliers, roasters
2	Origin diversity for supply chain risk mitigation and flavor diversity	<ul style="list-style-type: none">• Suppliers/roasters: Very high priorities• Countries: Origin diversity is competitive• Farmers: Origin diversity is irrelevant
3	Quality — consistency and flavor	<ul style="list-style-type: none">• Defined differently across segments, but all segments care• Roasters: High priority• Farmers, countries, suppliers: generally, care to the extent that they have a market to sell to
4	Climate adaptation and mitigation	<ul style="list-style-type: none">• Everyone• Mitigation of interest to European companies in particular

WHO WE CONSULTED

Interviews. We conducted 135 in-depth interviews with coffee sector stakeholders from 31 countries in Africa, Asia, Latin America, Europe, and the Americas. Participants represented farming operations/farmer associations, national coffee research programs, suppliers (import/export), roasters, allied businesses, and NGOs. Among the roles represented in the participant group were: CEO, sustainability manager, procurement, product developer, roaster, trader, agronomist, nursery manager, cooperative representative, farmer, and researcher.

Survey. 894 people from across the sector completed the survey; 261 were CEOs or owners.

In-depth interviews 135

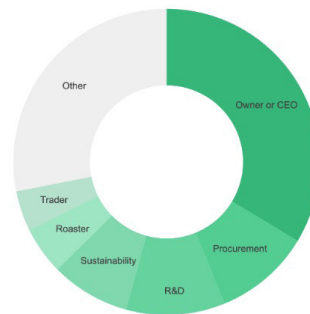


Survey 896

Broad value stream representation

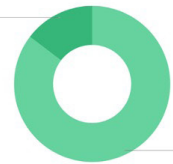


High leadership participation



WCR members

14.1%



Not WCR members
85.3%

← High representation of non-WCR stakeholders →

KNOWLEDGE AND AWARENESS OF COFFEE R&D LANDSCAPE

Knowledge of and alignment to national coffee strategies

- Is extremely low among the coffee sector in every region of the world except Asia, where knowledge/alignment were significantly higher (this may be the result of a small, possibly biased sample)
- Many farmers, suppliers, NGOs and others operating within countries have no knowledge of coffee strategies and national interests; some are aware they exist but say the strategies are not well communicated and the objectives are not known
- With little to no knowledge of national priorities, zero respondents reported aligning their operations with national priorities
- Awareness of the existence of national research entities is broad (for example, nearly all suppliers are aware of the national programs in their country, and even 50% of coffee roasters are aware of specific national research entities)

Sector knowledge of national program research and results

- Was extremely low across all countries, as a result of little-to-no collaboration between research organizations and value stream organizations, and extremely communications capacity within national programs
- Where knowledge was higher, respondents expressed frustration at low or poor quality investments, and unwillingness of national programs to adopt new knowledge, technologies, or approaches generated outside their purview

“They have just been not investing at all, or investing in the wrong things.”

Existence of private sector research

- Extremely limited—some activity in Central America and Asia, very little in Africa
- Where it exists, it is usually driven by suppliers and typically takes the form of baseline surveys to understand coffee production challenges, demonstration plots on productivity, system agronomy, and pests and diseases
- A few private sector actors (mostly exporters, sometimes together with larger roaster clients) are also pursuing climate change adaptation interventions and some are engaging in technology transfer (e.g., preferred access to improved varieties, fertilizer, etc.). These interventions typically take the form of projects, however, there has been a significant shift among exporters in the last five years to provide increasing levels of technical support to farmers via training, access to finance, and some are also providing access to varieties

“Since the 80s, we have kept each country separately doing our own research, it is necessary to join forces.”

PRIORITIES OF ROASTERS/BUYERS

Access to consistent supply of coffee

- To reduce pricing and sourcing risk, by not being limited to a few countries
- A related issue was the relative proximity of the coffee growing region to the buyer (e.g., Indonesia/Papua New Guinea proximity to Australia; Africa to Europe)

“There are wars, coronavirus, crop failures, and then we have to go someplace else.”

Flavor and quality

- To ensure quality and variety of flavor profiles, often for blend consistency
- To find specialty coffee differentiated for profile and driving consumer engagement
- Consistency was the highest concern among larger volume roasters

“Origin diversity drives the value of the entire portfolio.”

Sustainability

- Respondents report sustainability programs pursued in three ways: (1) identifying and implementing improvement projects at origin, often a mixture of economic, environmental and social projects, (2) managing relationships with and purchase of certified coffee (e.g., Rainforest Alliance + Fair Trade), (3) developing sustainable procurement/sourcing processes
- Sustainability portfolios reflect limited tools and an accumulation of activities that became available over time, rather than a comprehensive strategy to make an impact. Companies that were impact-focused tended to refer to KPIs like “number of farmers served,” rather than outcomes like increased incomes.
- Certified coffees were not considered a highly effective sustainability strategy (comments included: “It’s better than nothing...” or “In the right situation, with the right partnerships, it can do a lot of good...”), very large buyers had access to special projects that were believed to deliver higher impact
- A majority of interviewed respondents connect agricultural research to long-term benefit (especially farmer

profitability, origin diversity, climate resilience, risk management)

- A quarter of interview participants support pre-competitive efforts (WCR, ICPO, GCP, ECF)

“Stronger producers mean lower supply chain risk. I want strong producers. That’s our future. Ag R&D goes a long way to doing that.”



HIGH-VALUE AREAS FOR WCR FOCUS

As expressed by respondents

- Variety development, especially for quality, productivity, and climate resilience
- Improved education about and access to new varieties, including seed sector and nursery development programs to increase access to the new technologies (“Adoption is the biggest challenge.”)
- Disease (“Disease is a higher priority than quality if I have to choose.”)
- Continued focus on profitability
- On-farm variety trials (difficult for national programs)
- Climate adaptation, including agroforestry and intercropping research
- Safeguarding a broad mix of origins and increasing viability of new ones
- Supporting partners (both public and private) to improve research capacity through training, peer networks, and targeted investments
- Support to local research institutions to improve their communications and disseminate results

R&D INTERESTS BY REGION

Latin America

Interviews were conducted with stakeholders in Mexico, Guatemala, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Peru, Puerto Rico, and Brazil

Interests identified by country partners:

- Climate-relevant technologies, such as drought-resistant varieties, based on better predictive data about climate change impacts per country
- Better access to improved varieties, e.g., via standardized seed market
- Collaboration between the public and private sector regarding sale of seed and coffee vegetative materials, prioritizing affordability and high quality information
- Targeted breeding for drought and disease tolerance, including upgraded capacity for national programs to take advantage of molecular breeding approaches
- Identify and utilize genetic precursors for cup quality
- Provide connectivity among many different players in the coffee research space: CATIE, CIAT, CENICAFE, University Federal of Vicosa, Campinas, Embrapa, Starbucks, Nestle, Illy, etc.
- Disease surveillance support

“Research in coffee is very divided between countries, each one seeks its own interests.”

Africa

Interviews conducted with stakeholders in Ethiopia, Kenya, Rwanda, Uganda, Malawi, Burundi, the Democratic Republic of Congo

Priorities identified by country partners:

- Developing, testing and disseminating new varieties that are resilient to climate change, suitable to different ecological zones, like lowlands, that meet market demand
- Farmer education to accelerate technology transfer and adoption (to “change their mindset toward growing coffee and adopting new technology”)
- Improved agronomic techniques
- Pest and disease control
- Soil fertility

- Biodiversity preservation, climate change adaptation (perceived to be beyond capacity of national programs)

Asia

Interviews were conducted with stakeholders in India, Indonesia, Papua New Guinea, Australia, Japan, Vietnam

Priorities identified by country partners:

- New variety development or access
- Robusta (over Arabica)
- Intercropping (for risk management, income diversification and resilience to climate change)
- (In Indonesia + Papua New Guinea) Best agricultural practices for increased productivity
- (In Vietnam specifically) Water conservation, pesticide residue

NATIONAL COFFEE RESEARCH PROGRAMS ARE STRUGGLING

- To communicate the results of their work and the value of their programs
- To do extension and farm training (severe constraints)
- To stick with *C. arabica* in the face of severe production constraints and low prices; *C. canephora* (Robusta) is gaining in focus from many governments and farmers; *C. liberica* is piquing interest
- To ensure that their donors’/partners’ objectives align with their own
- To secure multi-year funding, which is critical for a tree crop
- To implement on-farm trials, which are critical to ensuring that research results align with farmers’ needs and realities, but which are expensive
- In some countries, to uphold mandates to mass produce and distribute seedlings to farmers (in some countries), which is very expensive

...But, have a high level of interest in access to peer research networks, new methods, and short courses to accelerate their work, as well as access to diverse germplasm for genetic improvement (e.g., breeding)

LOOKING TO THE HORIZON

We asked participants in producing countries to think about what areas of research WCR could explore (that we are not already focusing on) that would offer value to them. Suggestions are summarized below.

Advanced research

- Disease/pest solutions
- Genetic/molecular precursors of flavor
- Carbon in-setting

Applied research

- Nutrient absorption curves for varieties
- Organic fertilizers
- Irrigation
- Costs/methods of mechanization vs. traditional harvesting
- Fertigation
- Propagation technique to mass-multiply higher quality planting material

Evaluation trials

Country- level production cost analyses (labor and supplies) to assist in setting floor prices

Technology transfer

Next-generation weather forecasting and dissemination of relevant and actionable advice to farmers

Serve as a communication platform, communicate data and news about producing countries around the world (production volume, frost event or natural catastrophe, discovery of new varieties)

Post-harvest research

Fermentation and drying to produce higher quality



WHAT IS WORLD COFFEE RESEARCH?

World Coffee Research is the only organization in the world applying advanced agricultural science for coffee on a world-wide, collaborative basis. WCR enables the global coffee industry to invest in advanced agricultural R&D to transform the coffee sector and make coffee a vital source of global progress in the 21st century. Companies like Keurig, Starbucks, Illy, OLAM, ECOM, Counter Culture, Intelligentsia (and over 190 others) support our cutting-edge research to create new technologies and market opportunities for farmers because they recognize it is an essential precondition for farmers to achieve sustainable livelihoods.

Using advances in agricultural science, it is possible to dramatically improve coffee yields, coffee quality, climate resilience, and farmer livelihoods.

