

JUN 2024

**SUSTAINABILITY & RESILIENCE
OF THE COFFEE GLOBAL
VALUE CHAIN: TOWARDS A
COFFEE INVESTMENT VEHICLE**

**GLOBAL COFFEE
FUNDING MECHANISMS**



Table of Contents

Acknowledgments	3
Disclaimer.....	3
PART I. OVERVIEW.....	4
I.1 Objective.....	4
I.2 Background and context	4
I.3 Main conclusions and recommendations	6
PART II. THE WORLD COFFEE MARKET: CURRENT SITUATION AND PROSPECTS	12
II.1 Coffee prices and volatility	12
II.2 Coffee production.....	13
II.3 Productivity.....	13
II.4 Coffee trade.....	15
II.5 Growing coffee consumption.....	16
II.6 Balance supply and demand.....	18
PART III. INVESTMENT NEEDS FOR SUSTAINABILITY AND RESILIENCE IN THE COFFEE SECTOR – RATIONALE BEHIND A COFFEE FUND/VEHICLE	20
III.1 The economic rationale behind a coffee facility/fund to support investments on coffee farms	20
III.2 A bird’s eye view of the coffee market/sector	21
III.3 Size of the investment vehicle.....	29
III.4 What should be the objectives of an investment vehicle?	31
III.5 Preliminary estimates of the investment needs of the coffee sector.....	33
III.6 Conclusions: Let’s set up a coffee investment vehicle	36
PART IV. TOWARDS A NEW GLOBAL INVESTMENT VEHICLE FOR THE COFFEE SECTOR.....	39
IV.1 Actions needed to increase funding for the coffee sector.....	39
IV.2 Review of key initiatives to finance the coffee sector	39
IV.3 Value proposition for a coffee financial vehicle	40
IV.4 Goals	41
IV.5 A blended finance structure.....	41
IV.6 Options and road map.....	42
Phase 1: Demonstration / development phase – initiate grant facility	43
Phase 2: Investment vehicle.....	44
Phase 3: Listed HoldCo	45
PART V. CONCLUSIONS AND THE WAY FORWARD.....	47
BIBLIOGRAPHY.....	48
ANNEX I – OTHER FINANCIAL SCHEMES FOR THE COFFEE SECTOR	50
Annex I.1. UNIDO partnership model for de-risking investments in the Ethiopian coffee sector.....	50
Annex I.2 International Trade Centre (ITC) approach to leverage : Opportunities to support the coffee GVC with impact investment and financing.	56
Annex I.3 Programme - Alternative Response Options for Mitigation & Adaptation of Coffee Farms (AROMA)..	64
ANNEX II - INVESTING IN THE NEXT-GEN: ENSURING LIVELIHOODS IN THE COFFEE SECTOR.....	66
ANNEX III – ICO/ITC/EU COFFEE SUSTAINABILITY PROJECTS MAPPING DATABASE.....	67
ANNEX IV SUSTAINABLE CREDIT GUARANTEE SCHEME TO PROMOTE SCALING UP/OUT OF ENHANCED COFFEE PROCESSING PRACTICES IN ETHIOPIA AND RWANDA (2016).....	70

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Under the leadership of Vanusia Nogueira, Gerardo Pataconi conceived and consolidated this report, also integrating inputs by the ICO team: Denis Seudieu, Dock No, Monica Urquiza Baracho, Wolfgang Weinmann, and Miguel Zamora. The review and editing were carried out by Nina Clarke.

Disclaimer

This work is a product of the staff of the International Coffee Organization (ICO) with external contributions. The findings, interpretations and conclusions expressed herein do not necessarily reflect the views of the ICO, its International Coffee Council (ICC), or the governments they represent, nor of the members of the CPPTF or UNIDO. The ICO does not guarantee the accuracy of the data included in this work. This June 2024 edition replaces the April 2024 version which was edited to incorporate some suggestions from members of the CPPTF.

PART I. OVERVIEW

I.1 Objective

The objective of this report is to analyse requirements and options for establishing a global funding mechanism (fund/facility/vehicle) to pursue “Coffee Sustainability and Resilience” (C-SR). It provides a brief analysis of the coffee sector and its future demand patterns and identifies the following:

- (a) Requirements and solutions to support all actors in the Coffee Global Value Chain (C-GVC), especially farmers, to mobilize sustainable and responsible grants and investment funding to address climate change and structural challenges such as living income gaps, price levels and volatility, productivity, quality and market access;
- (b) Options for setting up a global coffee funding mechanism or vehicle;
- (c) Initial indications on the possible structure, governance, deployment, and M&E systems; and
- (d) Potential funders and resources.

I.2 Background and context

The **ICO, established 60 years ago under the aegis of the United Nations**, is the only intergovernmental organization for the coffee sector, bringing together both exporting/producing and importing/consuming countries. The ICO operates under an international treaty, the International Coffee Agreement (ICA 2007), and since 2018 has also more effectively engaged with relevant stakeholders from the industry, civil society and development partners through the **Coffee Public-Private Task Force (CPPTF)** and its **2030 Road Map**. This Road Map includes, among its planned actions, **the need to establish a coffee global funding mechanism**.

The ICO has set up and managed a few credit guarantee schemes¹ in the past and has been assisting its member countries to mobilize additional funds to foster sustainability, market access and promotion of consumption, as well as to improve Good Agricultural Practices (GAPs), productivity, quality, and safety. In these cases, funding was provided by development partners, ICO Members and through ad-hoc contributions from the private sector.

At the 134th Session of the ICC, the 4th CEO and Global Leaders Forum (CGLF), as well as within meetings of the CPPTF held in Bogotá, Colombia, from 3 to 7 October 2022, participants reiterated **the need to explore options to increase access to finance for coffee farmers and mobilize additional funding for investing in the present/long-term sustainability and resilience of the coffee sector**.

The ICO mobilized extra-budgetary funds from the United Nations Industrial Development Organization (UNIDO) to carry out the analysis presented herein, with matching resources from private sector members' contributions to the annual budget of the CPPTF. In-kind contributions were provided by the ITC. A high-level team of experts was then set up to carry out a **prefeasibility assessment of the sustainability investment requirements and possible financial mechanisms** to support a sustainable and resilient future for the coffee sector (July 2023-January 2024).

¹ See Annex IV.

Specifically, the contribution by UNIDO was related to **the Project: 190026-Partnership Model for De-Risking Investments in the Ethiopian Coffee Sector²**, funded by the **Italian Agency for Development Cooperation (AICS)**, the objective of which is to increase the volume, quality and value of Ethiopian coffee to contribute to UN Sustainable Development Goal (SDG) 9.3. Under this project, a general strategy has been developed to facilitate farmer groups' access to finance through the establishment of a specific credit line dedicated to funding investment proposals selected for their high impact on the coffee sector, as well as on the social and environmental context as presented in Annex I.1.

Considering the foregoing, UNIDO engaged with the ICO to investigate different options and engages also with the CPPTF as the two bodies are seen as suitable platforms to discuss and identify a common vision and solutions among coffee producing and importing countries, leading coffee companies, development and financial partners, and civil society, which together may have the capacity to create sound financial schemes for the entire Coffee Global Value Chain (C-GVC).

This Report capitalized on **knowledge generated by the CPPTF** including: (i) Sustainability Projects Mapping database; (ii) the model to assess coffee farmers' production costs; (iii) living and prosperous income benchmarks; and (iv) resilient coffee landscapes.

Prof. Rocco Macchiavello and his team, from the London School of Economics, and Emanuele Santi and Andrew Tillery, from the Development Finance Lab, were contracted to provide inputs for this Report, analysing the coffee sector's requirements, the current availability of financial resources, the rationale and the potential for **building a more coherent and pre-competitive system to increase access to finance for coffee value chain actors and, in particular, farmers**. As one of the viable options, the Report proposes the establishment of a coffee investment vehicle. As part of the ICO's cooperation with UNIDO, the ITC and the Sustainable Coffee Challenge/Conservation International, three different financial schemes are also presented in Annex I, to be considered for integration within the framework of the vehicle.

The preliminary findings of this work were presented and discussed at the 5th CGLF, as well as at the 5th World Coffee Conference (WCC) held in September 2023 in Bangalore, India. They were then examined at the 136th Session of the ICC, when ICO Members requested that the ICO **continue its efforts to foster access to funding and to define and set up a sound blended finance mechanism accessible to all coffee-producing countries and to ensure a sustainable**

Box 1 - The ICO Coffee Public-Private Task Force (CPPTF)

The CPPTF was established in 2020 following a decision by the ICC in September 2019 when ICO Members welcomed the "London Declaration on Price Levels, Price Volatility and Long-Term Sustainability of the Coffee Sector", signed by 12 leading coffee private sector companies and key coffee stakeholders as supporting organizations.

The London Declaration commits to the "allocation of resources towards the realization of shared actions in line with this Declaration, and towards exploring the set-up of a global multi-stakeholder funding mechanism with the goals of leveraging investment in the coffee sector through blending of public and private sector funding, incentivizing environmental and social stewardship, fostering development of sustainable coffee regions, supporting transparency efforts and policy reform, building additional capacity for relevant policy development and enforcement in producing countries, and reducing poverty."

The CPPTF and the ICC therefore agreed on a common vision and the 2030 Road Map, and likewise, five Technical Workstreams were established to produce proposals and solutions to be reviewed by the CPPTF and build consensus before being submitted to the ICC for consideration and to the CEOs and Global Leaders Forum (CGLF).

² The UNIDO Project 190026 aims to minimize investment risk by establishing a responsive framework in cooperation with public and private counterparts to enable the development of private sector initiatives operating within the Ethiopian coffee value chain. Said risk minimization strategy is based on the cooperation framework established with the ICO, through a Joint Declaration signed in 2019 <https://www.icocoffee.org/documents/cy2018-19/icc-125-6e-ico-unido-joint-declaration.pdf>.

future for their farmers, the coffee industry, and consumers.

I.3 Main conclusions and recommendations

The process for developing a coffee-focused financial mechanism was based on the identification of challenges, opportunities and short-, medium- and long-term solutions. It also included the appraisal of the rationale for such interventions and details on how producing countries, industry and development partners can (together) upscale current efforts and **increase the coffee sector's access to finance**. In this context, the work of the ICO team and experts was guided by the need to think outside of the box and identify new, innovative options and sources of finance. In addition, the initial analysis also considered how to determine potential beneficiaries and partners and whether it would be **feasible to set up an ad-hoc financial scheme just for coffee or if it should also be expanded to include other commodities**.

The assessment of the **rationale for setting up a specific coffee fund was based on a sound economic analysis**, looking at both macro- and micro-economic perspectives, and showed that the pursuit of resilience and sustainability within the coffee sector does indeed require the increased availability of and access to finance through coffee-specific mechanisms.

Coffee farmers are subject to an increasing demand for access to finance and knowledge. This is due to growing pressure from consumers, buyers, and regulators alike on farmers and producing countries to achieve higher efficiency, productivity, quality, quantity, and sustainability in order to:

- Combat (mitigate/adapt to) climate change and its negative impact on coffee production (yield/quality);
- Reduce the negative impact of price levels and volatility;
- Tackle ageing plantations and farmers;
- Defeat gender inequality;
- Overcome low productivity and huge differences among farmers/regions/countries;
- Address the reduction in the average farm size while seizing opportunities for consolidation/aggregation;
- Comply with new, more stringent regulations on sustainability (deforestation and due diligence processes) and the use of agrochemicals;
- Absorb and minimize increased cost of inputs;
- Readdress the fragility of the supply chain to external shocks;
- Meet consumer demand for quality/affordability/sustainability;
- Resolve weaknesses in domestic financial systems/collateral/cost of borrowing; and
- Overcome structural constraints preventing access to finance and know-how.

Regarding the **entire C-GVC**, it needs to address, through concerted efforts, structural issues such as supply and demand balance, price volatility, climate change, stringent regulations and due diligence requirements, high transaction costs, interest rate differentials between exporting and importing countries, consumer demand dynamics and the risk of concentration in a few origins, as well as supply chain disruptions due to national, regional and international instability and conflicts.

The **coffee sector, as a whole, continues to grow in terms of production and consumption**. Hence, in order to overcome existing structural constraints and ensure a healthy balance between supply and demand, a sound value distribution among all engaged actors and its long-term sustainability would require a significant transformation of the sector and a larger and more consistent flow of capital.

This report acknowledges **challenges in determining coffee investment requirements**, and therefore the size of a

coffee global funding mechanism, due to **limited available information** and farm and origin **heterogeneity**, as well as insufficient data on the **costs and impacts of existing sustainability programmes**. Specifically, regarding the assessment of investment and funding needs, the report looked at different options and benchmarks.

GROWING DEMAND

- Globally, coffee is immensely popular, with **3 billion cups consumed daily**.
- Looking ahead, the demand for coffee is projected to continue growing over the next two decades (**growth 2.0-2.5%/year**).
- This growing demand sets the stage for **significant changes and challenges in the coffee market**.

CHALLENGES

- **Fragmented Supply: most of the coffee supply comes from smallholders in many origins.**
- **There are about 25 million coffee family farmers worldwide, with coffee being the primary source of income for 12.5Mil of these farmers.**
- **Over 80% of farmers are smallholders and at least 5.5 million farmers live below the International Poverty Line.**
- **Coffee is typically grown on hilly terrain, making mechanization often not feasible/too costly.**
- **Lack of long-term contracts/stable commercial relationships makes medium- & long-term planning & investment, challenging also due to poor access to credit, insurance, know-how etc.**
- **Impact of Climate Change: contraction of the supply side with risk of halving supply by 2050.**

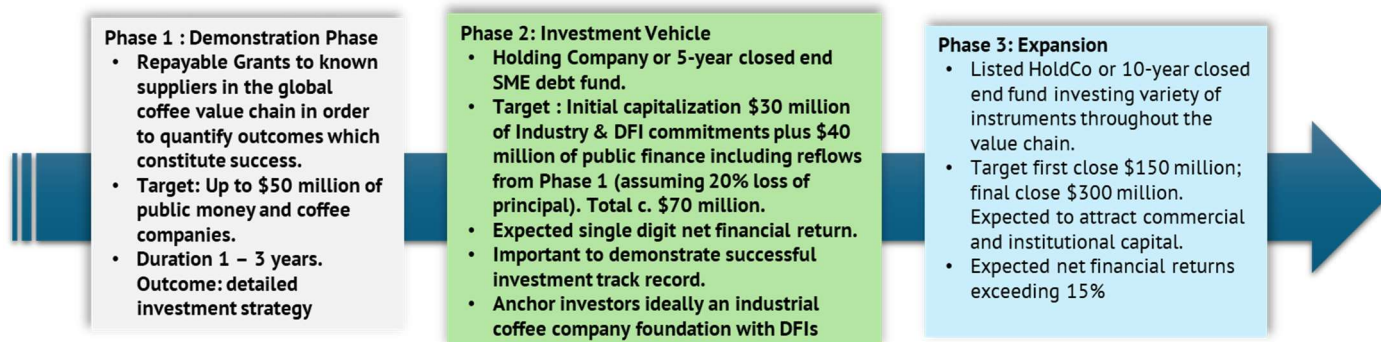
The study conducted by the Columbia University (Sach et al. 2019) suggested that approximately **\$10 billion annually** is needed to make significant progress on achieving the Sustainable Development Goals (SDGs) in coffee-growing regions. The industry's precompetitive contributions were expected to focus on non-public goods and services, with a proposed goal of **raising \$2.5 billion per year through private sector contributions** to a Global Coffee Fund (GCF). This amount would **be matched by bilateral and multilateral donors, as well as national budget outlays of producing-country governments, resulting in an additional \$5 billion for initiatives such as improving access to basic services and supporting farmers and workers.**

The preliminary results of the analysis carried out here by the team from the London School of Economics (LSE) further highlight the income gap and yield heterogeneity within countries and provide a very broad and tentative estimate of the **annual cost to improve productivity, ranging from \$256.2 million to \$593.2 million**. Suggested investment priorities would aim at closing the significant gaps for many farms, especially in disadvantaged origins, and would **finance productivity gains, renovation of coffee plantations and covering temporary income loss for farmers**, as well as address gender equality. Cost of compliance with new regulations and price volatility were not specifically included in our model.

Additionally, our analysis also referred to the recent estimates contained in the World Coffee Research's white paper (Maredia, et al. 2023) which identified the **yearly cost of combatting climate change effects to be between \$246 million (Low-scenario) and \$452 million (High-scenario)**. While the simple aggregation of ICO and World Coffee Research (WCR) estimates may not be precise, it can provide a general indication of the magnitude of the **overall yearly investment needs, considering productivity and climate change. Cautiously, it would range from \$256.2 million to \$1.04 billion**. The report also stresses the urgent need to **improve access to farmers' data** and the need to fill knowledge gaps in the industry's sustainability interventions so as to be able to provide a more accurate estimate of investment needs **to make the coffee sector sustainable and resilient.**

As result of the analysis carried out, an investment scheme (vehicle) was suggested: **a blended financial vehicle**

intended to include senior debt DFIs, impact investors, C shares, and A shares from coffee companies. A step-by-step approach in three phases is recommended:



- A single crop, single segment fund may have limited interest to commercial capital and even DFIs. Two options are considered: (A) IV as a fund as a global public-private partnerships initiative or (B) to set up the vehicle as a Holding Company (“HoldCo”);
- The proposed vehicle will have a two-pronged approach:
 - (i) direct lending to coffee cooperatives; and
 - (ii) improving access to finance through credit enhancement for smallholders via local financial institutions.
- It would address both the infrastructural weakness for coffee production, strengthening urgent needs of financing by farmers, and promoting sustainable development within the sector;
- High single digit net returns to investors would be pursued.

Public finance would therefore be used to catalyse commitments to the proposed Investment Vehicle from private players who are already active in the value chain but also crowd-in investments by other investors who typically see investments in coffee farmers as too risky. **Additional schemes developed by ICO partners** – UNIDO, the ITC and SCC/CI – are also presented here as reference to help stimulate discussions on possible integrations and linkages to define the way forward:

UNIDO Model – Facilitate Access to Impact Financing in the Ethiopian Coffee Sector: UNIDO partnership model for de-risking investments in the Ethiopian coffee sector (Annex I.1). The Ethiopian Coffee Fund by the Italian Development Cooperation aims to provide concessional loans and technical assistance to investment proposals with a high socio-economic and environmental impact. It is under implementation and supports the Commercial Bank of Ethiopia (CBE) to efficiently invest the Italian soft loan in bankable, sustainable and impactful business opportunities in the Ethiopian coffee sector. The funding and investment proposals are presented by private enterprises, local cooperatives, and unions through a series of calls for proposals. The investment proposals are assessed through a new dedicated and innovative impact *assessment tool for ranking the proposals based on their impact, investment risk and bankability*. This scheme engages all domestic and international public and private stakeholders working in the coffee sector and is based on the long-lasting experience of UNIDO in the negotiation, operation and management of several credit lines and facilities in developing countries to achieve sustainable industrial development.

International Trade Centre (ITC) Model - Opportunities to support the coffee value chain with impact investment and inclusive financing (Annex I.2). This model is under development and co-creation by ITC, ICO and its partners including the Small and Medium Enterprise Agriculture Finance and Investment Network (SAFIN). It uses a participatory stakeholder approach that includes partnership with coffee value chain operators and producers, financial institutions, impact investors, policymakers and technical assistance providers. Pilot activities aim at engaging impact investors to invest and finance specific coffee projects, grouped in impact categories based on their focus, to be matched with investors' areas of intervention. Specifically, it will concentrate on curating a pipeline and investors, developing a pipeline of opportunities and on building competitiveness and promoting market linkages so that investments are de-risked. It will also fundraise for select projects or pilots, and act as a valued "matchmaker" structured around three impact baskets: (i) sustainable development, circular economy and environmental stewardship; (ii) socio-economic empowerment and human rights; and (iii) innovative agriculture, competitive MSMEs and entrepreneurship. This approach is complementary to the ICO's initiative and can be integrated in the general proposal. It can provide a pipeline of capital providers and MSME projects to the ICO Investment Vehicle. ITC technical assistance support can also contribute to ensuring competitiveness and de-risking.

SCC/CI Model - AROMA³ program by Sustainable Coffee Challenge/Conservation International recently endorsed by the Green Climate Fund (GCF) (Annex I.3). This programme concept was recently endorsed by the GCF and aims at supporting smallholder coffee farmers to build on-farm resilience to the effects of climate change. In addition to promoting farm-level practices that improve responsible land management and support climate adaptation, together with local executing partners, the programme will take a landscape approach and will partner with governments to align strategic priorities, strengthen low-emission and climate resilient land-use planning, and support effective governance. AROMA will design, build, and capitalize a "*Nature Positive Facility*" (envisioned to include grant, reimbursable grant, and loan mechanisms) to work within the Sustainable Coffee Challenge and further support climate resilience in coffee farms beyond the timeline and financial support of the GCF Program engaging the private sector towards greater actions in building the climate resilience of coffee farmers. GCF funding will be directed to support farmer adaptation and enabling environment activities, both on-farm and in the broader landscape. Private sector co-financing will support the core AROMA actions, as well as actions that increase farm yield above and beyond adaptation activities and efforts to increase coffee quality. As a next step, a full funding proposal will be developed, presenting at least four country-level projects covering Colombia, Mexico, Uganda, and Viet Nam with a high likelihood for future expansion into additional countries.

³ <https://www.greenclimate.fund/document/alternative-response-options-mitigation-adaptation-coffee-farms-roma-program>.

Finally, as concrete next steps, we recommend the following actions:

- 1) **Present this Report to the CPPTF and the ICC and further engage with interested parties;**
- 2) **Secure consensus from the CPPTF and the ICC on this document and on the next steps and plan;**
- 3) **Mobilize all the actors in the C-GVC, in a pre-competitive manner, to work together to mobilize, manage, and deploy additional financial resources to the coffee sector, through blended finance with bilateral and multilateral donors and financial institutions;**
- 4) **Define a detailed concept for Phase 1, including a proposed governance, institutional set up and investment strategy, including:**
 - Integrating the investment vehicle with the other options, including those presented in this report;
 - Assessing the opportunity to foster access, expand and improve existing funding mechanisms vs setting up new schemes/vehicles and options for fund mobilization for the coffee sector;
 - Building a pre-competitive mechanism (existing or new platforms including the creation of a Coffee Foundation) to mobilize resources from the coffee industry, countries, donors, impact investors and other public and private funding institutions;
- 5) **Engage an initial critical mass of donors and coffee companies to elicit the first pledges, through a dedicated engagement strategy (B2B meetings, roadshow, engagement groups, etc) for blended financing of Phase 1 (demonstration) of the investment vehicle, including the identification and agreement of mechanisms for mobilizing private sector contributions;**
- 6) **Initiate engagement with DFIs and select impact investor to prepare the ground for Phase 2-IV;**
- 7) **Launch the Phase 1 (demonstration) in 2024/25: build a TA facility, funds mobilized, pipeline identified and assessed and implementation;**
- 8) **Start Phase 2 (Investment Vehicle) between 2026 and 2028, based on the success of Phase 1.**
- 9) **Set up a system for farm data collection to better assess investment needs and for evaluating the effectiveness of sustainability projects in the coffee sector built around the ICO Global Knowledge Hub and open to partnership with academia and other stakeholders and platforms.**

Box 2 - Internal guidelines for developing the Global Coffee Funding Mechanism

- (1) **Objectives and priorities:** What are the different objectives of the fund (e.g., funding of sustainability interventions, resilience and sustainability of coffee farmers, closing the living income gap, fighting climate change, tackling the effects of price volatility, promoting the circular economy and regenerative agriculture, etc.)?
- (2) **Eligible beneficiaries:** Who are the eligible beneficiaries? If there are many potential beneficiaries, how can they be prioritized? And can they be linked to national/regional coffee sustainability plans?
- (3) **Model:** Based on the priorities/eligible beneficiaries, what financial mechanism should be proposed (e.g., grants/loans, investment, blended finance mechanisms, carbon credits, green impact bonds, payback mechanisms, technical assistance to access the fund, build local capacity)?
- (4) **Size/structure:** What should be the total size of the fund? How should it be structured and managed (e.g., revolving fund, guarantee)? What time horizon and steps should be considered?
- (5) **Sources of funding:** Who are the potential funding partners and what is the possible fundraising strategy/mechanism.
- (6) **Conditions for implementation:** Who qualifies for the fund? Should there be a financial return or not? Should it be a guarantee fund set up by the public or private sector or a more comprehensive vehicle?
- (7) **Synergies:** What are the current opportunities that need to be considered and potentially leveraged? What are existing and planned funds and mechanisms that can be pooled into the C-SR vehicle or tapped into, such as GEF, GCF, development financial institutions, governments, private sector, consumers?
- (8) **Risks:** What are the key risks such as: lack of consensus due to diverging interests, weak/unreliable/biased governance structure; lack of transparency, monitoring system; fair decisions and disbursements; not fit for purpose, not seen as pre-competitive, lack of demand, etc.?
- (9) **Impact:** What is the potential development impact and/or sustainable return on investment for this fund? Is it transformational or not? How and what to measure?
- (10) **Ownership, decision-making, governance, and alignment of stakeholders:** Who and how to set up and manage this vehicle and ensure independence and efficiency?
- (11) **Outcome:** The C-SR funding mechanism should be ambitious and transformational but must be feasible and realistic. It should be pre-competitive with regards to private sector engagement, and it must provide real added value for all stakeholders, with strong mechanisms for accountability, reporting and governance, and be seen by farmers and consumers as a strong commitment towards a sustainable future for the coffee sector.

PART II. THE WORLD COFFEE MARKET: CURRENT SITUATION AND PROSPECTS

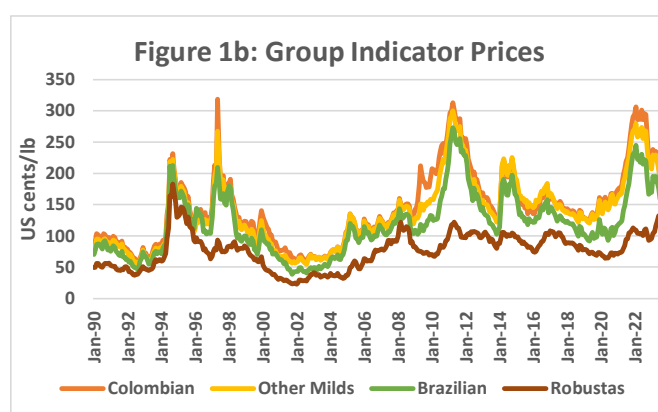
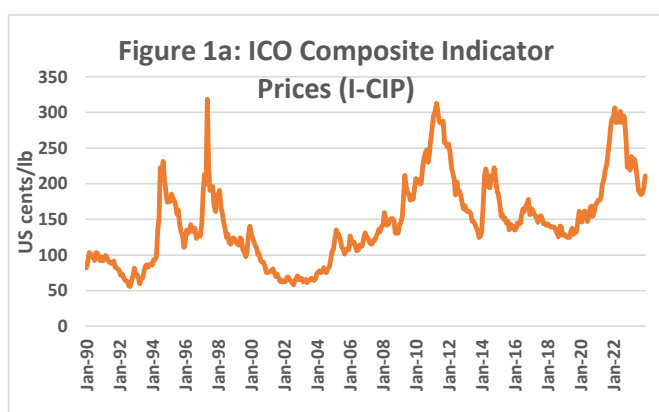
II.1 Coffee prices and volatility

As is the case for many commodities, **price volatility is a major concern for stakeholders in the world coffee market**. In exporting countries, volatility is a source of uncertainty in relation to export earnings and tax revenues, as well as instability in relation to producers' incomes. In importing countries, price volatility affects traders' and roasters' control of processing costs and profit margins, the prices of which are then transferred to consumers. The highest volatility levels are generally recorded for the months of May-August, since they cover the period of possible frosts in the world's largest coffee exporter, Brazil, fuelling speculative activity. Statistical tests show that coffee prices have been highly volatile since 1990.

Price volatility since 1990 highlights a significant change within the world coffee industry. On the one hand, the delay in the price response to exogenous impacts such as climate shocks has become considerably shorter. On the other, however, as strong as the reactions may be, they do not persist for very long. The factors responsible for excessive coffee price volatility should be considered initially in terms of market fundamentals, particularly those related to supply, which is frequently influenced by exogenous factors related to climate, in the sense that a period of short supply may be followed by a period of over-production and vice-versa. Developments in market fundamentals may, therefore, favour or prevent the emergence of speculative factors.

The **ICO composite indicator price (I-CIP)** and group indicator prices since 1990 are shown in Figure 1. As illustrated in the graphs below, following the end of the market control (quota) system, prices levels dropped and the I-CIP was below 80 US cents/lb. Unprecedented low prices led to what was referred to as a coffee price crisis in between 1999 and 2004. Indeed, the lowest level during this coffee crisis was 41.17 US cents/lb, recorded in September 2001. By way of comparison, the lowest level recorded during the most recent low-price period was 93.33 US cents/lb, as seen in May 2019. Prices have since gradually recovered, with **the I-CIP averaging 182.04 US cents/lb in February 2024**. On the other hand, the **costs of coffee production inputs, particularly fertilizers and labour, continue to rise, thus reducing income margins for coffee farmers**.

Fig 1 – ICO Composite Indicator Prices (I-CIP)



II.2 Coffee production

The dynamics of world coffee production are generally characterized by some degree of instability, due mainly to seesaw production by the largest producing countries. Over the last 60 years, there has been a steady upward trend in world production, interspersed with periodic falls. This trend indicates the presence of cyclical patterns within distinct periods. The **average yearly growth rate since 1990 is 2.5%** as **total production increased from 93.5 million 60-kg bags to 168.2 million bags in 2022**. Except for Africa, all coffee-growing regions recorded a steady growth in their production over this period.

The regional perspective of coffee production

Structural change in coffee production patterns refers to the **progressive concentration of coffee supply origins**. In 1990, the 10 largest producing countries represented 76% of world total production and included: Brazil, Colombia, Indonesia, Mexico, Guatemala, Cote d'Ivoire, Ethiopia, India, Costa Rica and El Salvador. **In 2022, the 10 largest coffee growing countries controlled 88% of world production** and included: Brazil, Vietnam, Colombia, Indonesia, Ethiopia, Uganda, Honduras, India, Guatemala and Mexico. The remaining 40+ coffee producing countries represent only 12% of world supply.

II.3 Productivity

In terms of productivity, the coffee market has been far from stagnant in the past three decades. For example, **from 1990 to 2020, the industry's productivity increased by 80%, rising from 8.7 x 60-kg bags/ha to 15.6 x 60-kg bags/ha⁴**. The range within the world average is large, with the highest at 44.2 x 60-kg bags/ha and the lowest at 0.3 x 60-kg bags/ha.

This reflects the disparity of organizational capacity, governmental support, topology and other factors among the different origins. **Closing the gap between the highest and lowest productivity levels implies meeting the increasing future demand for coffee without the expansion of coffee land**. From 1990 to 2020, the **area under coffee barely moved, increasing to 11.0m hectares from 10.8 million hectares**.

The biggest producers in the market, Brazil and Vietnam, have made the largest gains, with their productivity increasing by an additional 25.1 x 60-kg bags/ha and 23.0 x 60-kg bags/ha, respectively, in the past 30 years. Ecuador, Honduras, Nicaragua and Rwanda are other origins with significant productivity gains. That said, 27 producers suffered from reduced productivity, with Cameroon, the Central African Republic, El Salvador, Togo and Zambia the most affected.

⁴ Data for area under coffee are from Food and Agriculture Organization (FAO) and were used to calculate the productivity data. It is recognized that different farming practices, including irrigation, mechanization and fertilization, planting density, clonal varieties, farm sizes and other factors will impact the yield per hectare. Intra-country analysis could reveal the differentiations due to these factors, but country level analysis will lead to an average.

Fig 2. Share of world production per region

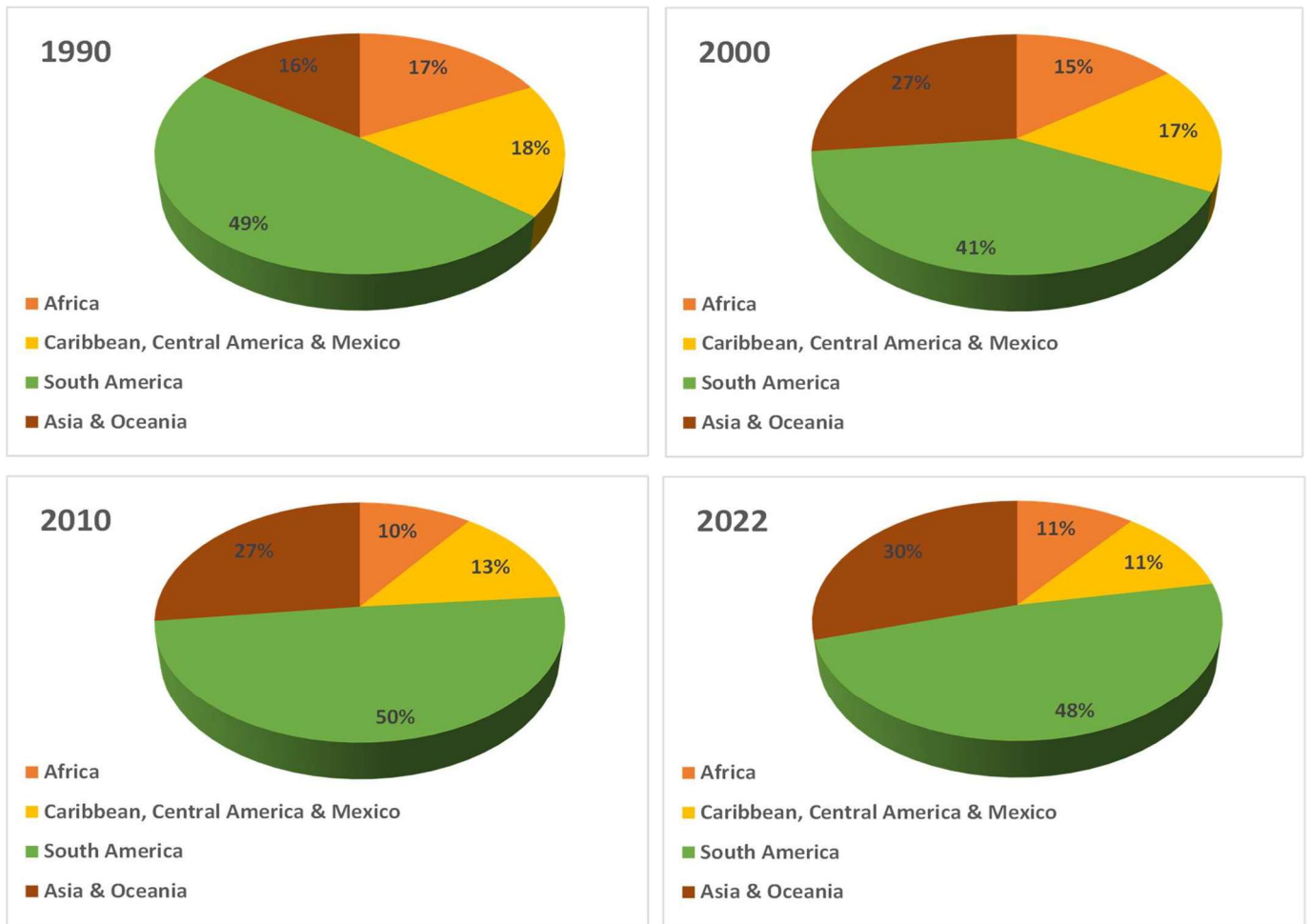


Fig 3. Top 10 coffee producers in 1990 and 2020

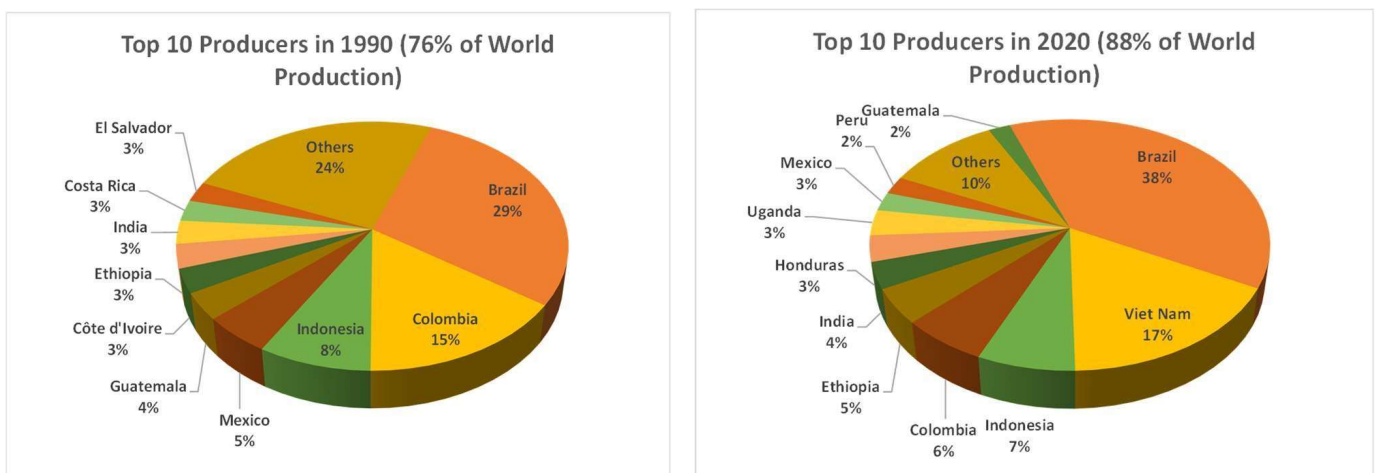
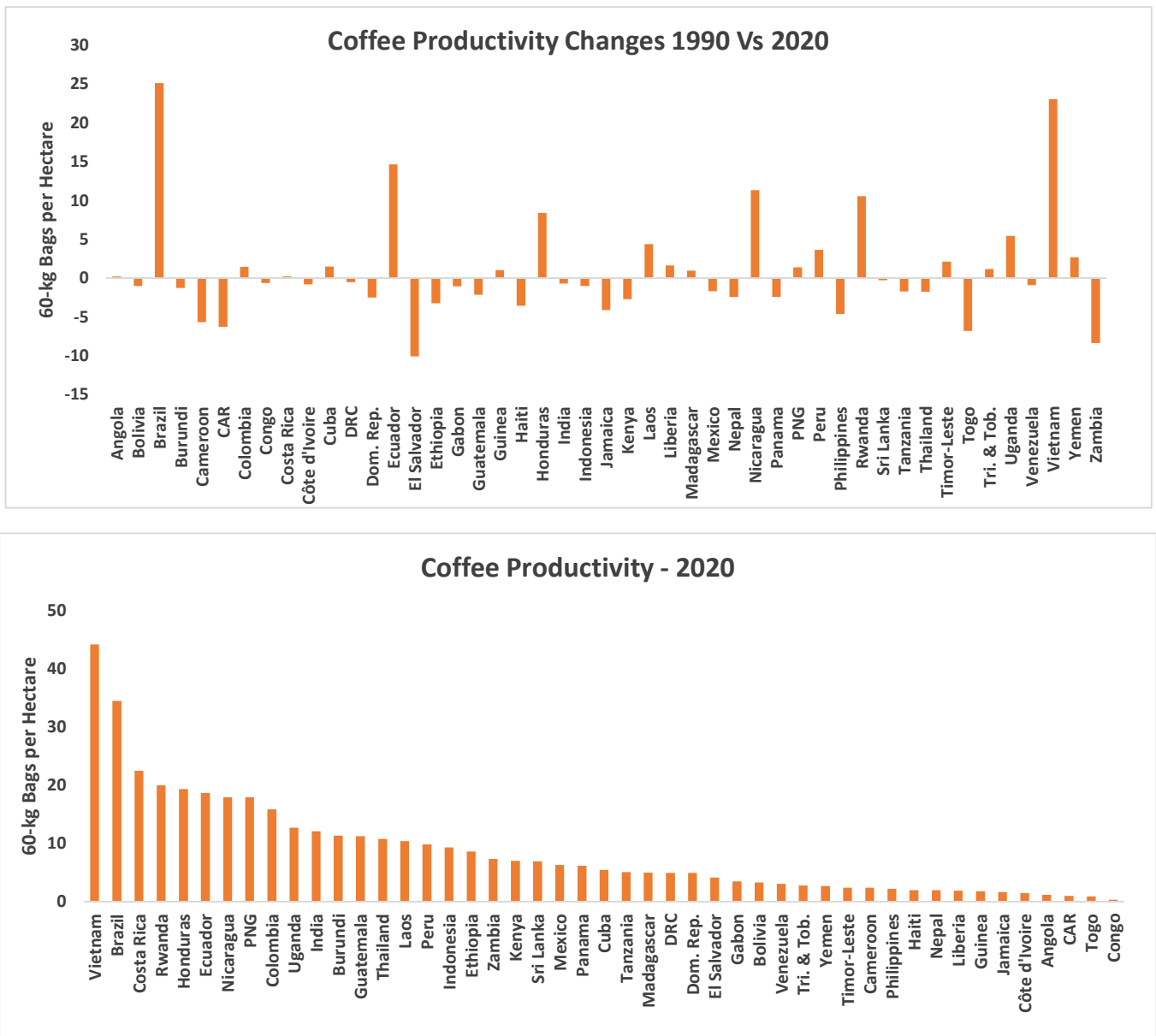


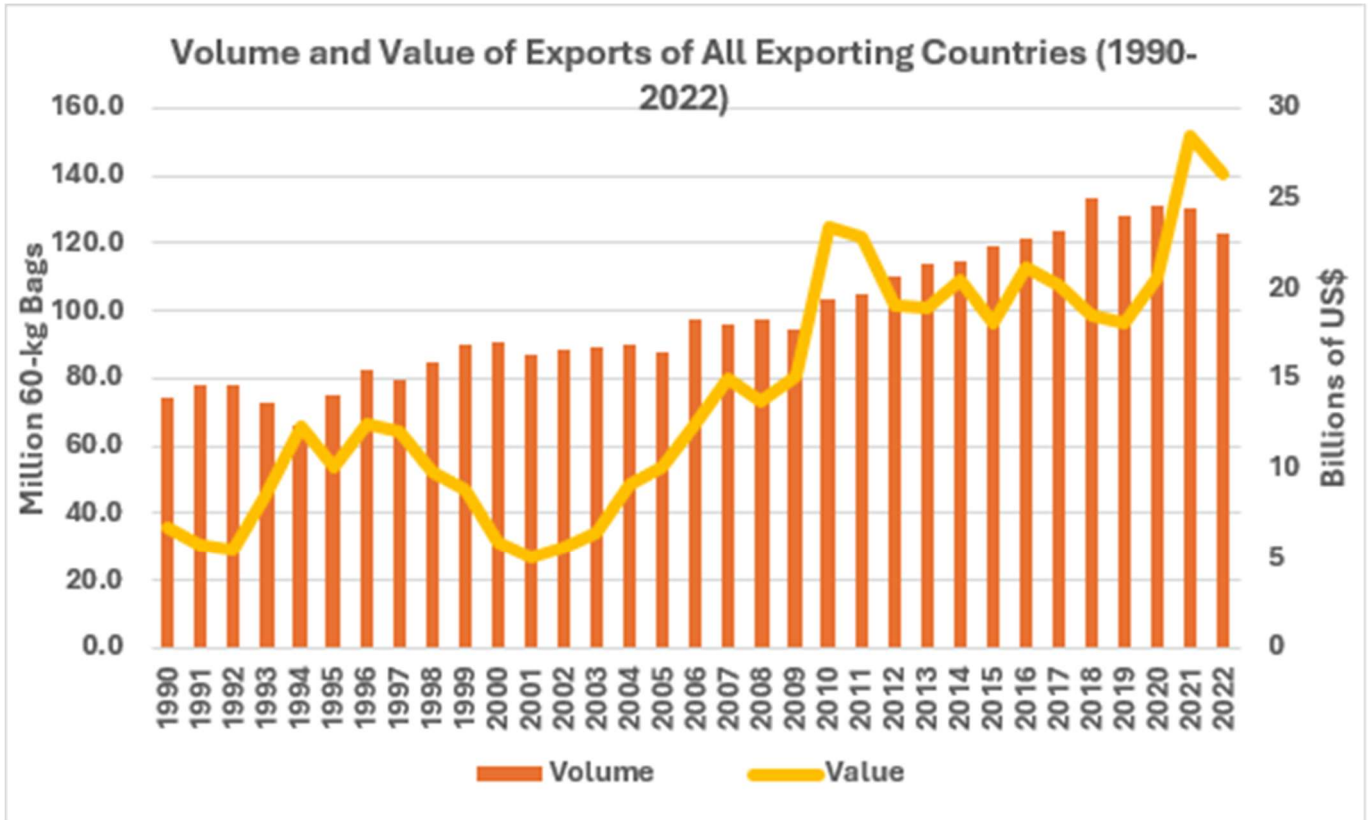
Fig 4. Coffee productivity 1990-2020



II.4 Coffee trade

Total exports by exporting countries increased steadily during the last 60 years despite some interruptions in the upward trend, notably due to severe climatic events in the main producing countries. **Total exports by all exporting countries were estimated at over 130 million 60-kg bags during coffee year 2021/22 compared with 74.5 million in 1990/91 and 42 million bags in 1964/65.** Between coffee years 1990/91 and 2021/22, total exports by exporting countries increased by an average of 2.0% per year. **The total export value in coffee year 2021/22 reached US\$28.5 billion**, the highest level on record. The lowest levels were recorded in the early 2000s.

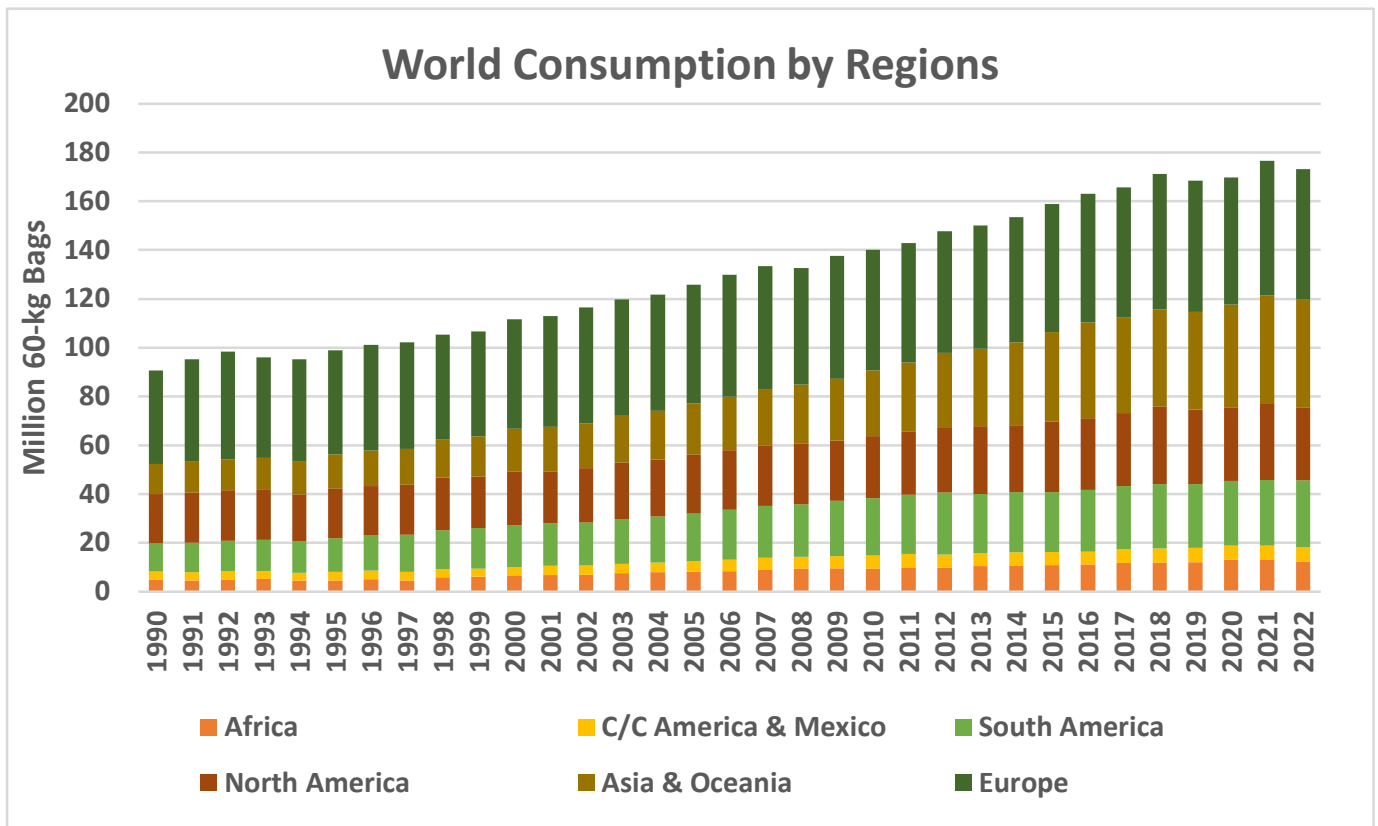
Fig 5. Export volume and value 1990-2022



II.5 Growing coffee consumption

World consumption increased at an average annual growth rate of 2.8% over the last three decades, amounting to 173.1 million bags in 2022 compared with 90.7 million in 1990. The world population was 5.3 billion in 1990, reaching 8.0 billion in 2022.

Fig 6. Consumption by region 1990-2022



Domestic consumption in exporting countries

Spearheaded by Brazil, **domestic consumption in exporting countries has grown significantly from 19.5 million bags in 1990 to 55.1 million bags in 2022, representing an average annual growth rate of 5.7%**. With a consumption of 22.7 million bags in 2022, Brazil is not only the biggest consuming country among the world’s coffee producing countries, but also the world’s third biggest consuming market after the European Union and the United States of America. Other producing countries which have significant levels of domestic consumption are Indonesia (5.8 million bags in 2022), Ethiopia (3.7 million bags), Vietnam (4.0 million bags), and the Philippines (3.5 million bags). In terms of per capita domestic consumption, Brazil continues to account for relatively high rates (6.4 kg per capita in 2022). Venezuela, Honduras, Costa Rica, Ethiopia and El Salvador have a per capita consumption of between 2 and 3 kg. **Although per capita consumption levels are still low in several exporting countries, there is considerable potential in the medium and long terms, particularly given their economic development prospects.**

Consumption in non-producing countries

Developed countries are traditional and mature coffee markets. These traditional markets include mainly North America (Canada and USA), European Union, Japan, Norway, Switzerland, and the Russian Federation. **Total consumption reached 118.1 million bags in 2022 compared to 71.2 million in 1990. The average annual growth rate for consumption by all importing countries was 2.1% over the period from 1990 to 2022.** Europe’s total consumption was estimated at 53.1 million bags in 2022 compared with 38.4 million bags in 1990, representing an average annual growth rate of 1.2%. The consumption of the United States was estimated at 25.9 million bags in 2022 compared to 18.4 million bags in 1990, representing an average annual growth rate of 1.3%. Japan’s coffee consumption was 6.9 million bags in 2022 compared to 5.6 million bags in 1990, representing an average annual

growth rate of 0.7%.

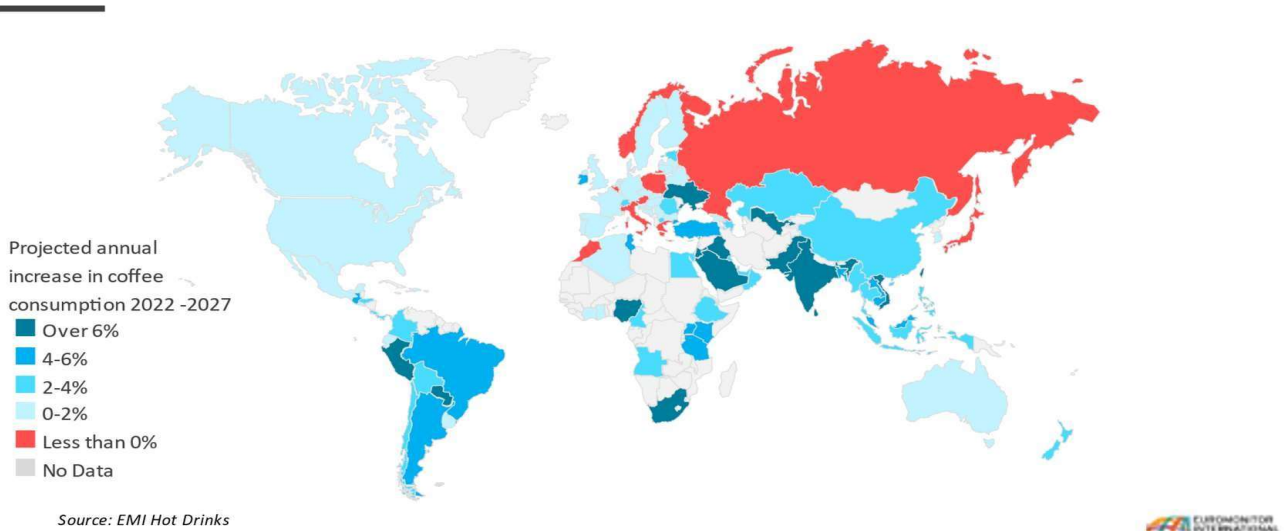
II.6 Balance supply and demand

The prospects of future demand for coffee were well documented by Euromonitor during the 5th World Coffee Conference in Bangalore, India, in September 2023. Figure 7 below shows how fast it is growing every year on average. There are a few places where it is shrinking (marked in red), which are mostly highly mature European markets like Italy or Norway. Most developed countries are in light blue, indicating largely stable consumption growth. As we move into developing countries, the blues get darker, indicating faster growth. The darkest blues are found in the Middle East and South Asia. Over the last three decades (1990-2022), countries like China, South Korea, the Philippines, Saudi Arabia, UAE, and Turkey experienced remarkable coffee consumption growth rates, exceeding 6%. Notably, developing regions exhibit diverse coffee consumption formats: **instant coffee dominates growth in the Middle East and Asia, but has declined in Europe and North America, while ready-to-drink and pods are crucial in developed countries but scarce in developing ones. Roasted beans, however, maintain a consistent appeal globally, particularly in Europe.**

Traditional markets in North America and Europe are expected to sustain their current consumption levels, but the correlation between income and coffee consumption diminishes due to market saturation. Growth in the coffee industry will predominantly come from developing regions like Latin America, the Middle East, Africa, and Asia, with Latin America leading in the next decade.

Fig 7. Coffee Demand growth rate

Coffee demand continues to grow in most of the world

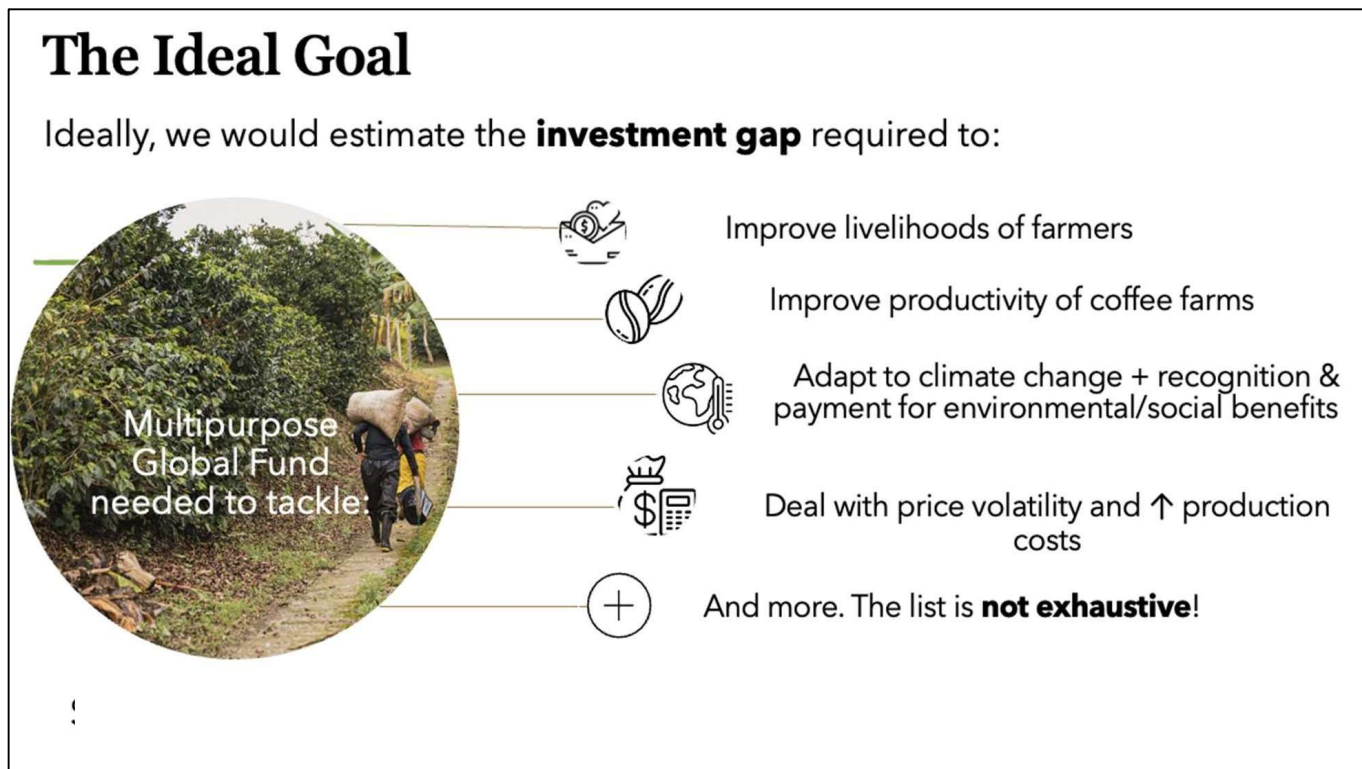


The primary drivers of coffee consumption in developing countries are increasing population, faster economic growth, and improving living standards, all of which offer significant potential for future growth. Despite challenges such as price volatility and climate change affecting supply, the shift towards developing countries is pronounced, with Brazil, India, Indonesia and Ethiopia playing key roles. Developed markets present growth opportunities in relation to value, with consumers opting for more expensive formats. However, while a few developed countries may increase consumption, **the bulk of the world's coffee consumption surge is expected to come from developing nations, with notable potential in China.** In summary, with regards to the key features of the coffee sector:

- **The average growth rate since 1990 is 2.5%, as total production increased from 93.5 million 60-kg bags to 168.2 million bags in 2022. There has been steady production growth in all coffee-growing regions except Africa.**
- **From 1990 to 2020, productivity increased by 80% (from 8.7 x 60-kg bags/ha to 15.6 x 60-kg bags/ha), ranging from 44.2 x 60-kg bags/ha to 0.3 x 60-kg bags/ha.**
- **Global demand for coffee is expected to continue growing at a rate of between 2.0 to 2.5% annually, so supply should also increase to maintain a “sound” balance.**
- **A few developed countries will increase their consumption, specifically those with high immigration rates, as well as those that currently drink a lot of tea, but most will be stable or decreasing.**
- **The bulk of world consumption from developing countries and high rates are expected from China.**
- **Different scenarios exist regarding the impact of climate change on coffee production, the most dramatic of which foresees a reduction of coffee-suitable land of 50% by 2050.**
- **While there is significant potential for consumption growth, the main challenges continue to be price volatility and climate change, threatening to reduce supply from many origins due to subsequent rising production costs**

PART III. INVESTMENT NEEDS FOR SUSTAINABILITY AND RESILIENCE IN THE COFFEE SECTOR – RATIONALE BEHIND A COFFEE FUND/VEHICLE

To the extent possible, the analysis presented herein has been based on available data and existing research. Originally, the intention was to provide a “back-of-the-envelope” calculation for a reasonably sized facility. However, such an exercise could not be completed due to a lack of the required micro-data. Nevertheless, a preliminary analysis **to address challenges and take advantage of the great opportunities offered by the growing demand for coffee shows the need to mobilize substantial funding** to fight climate change, close farmers’ living income gaps and overcome sourcing and supply chain weaknesses.



III.1 The economic rationale behind a coffee facility/fund to support investments on coffee farms

Below we outline the economic rationale behind establishing a coffee financial mechanism to foster investments on coffee farms and to put forward some concrete ideas for implementation. The rationale is based on the work of Prof. Rocco Macchiavello and his team at LSE⁵. **The rationale proves the need to set up a new investment vehicle dedicated to coffee, conceived as a blended mechanism with direct engagement of the largest private coffee companies to leverage further investment by institutional and public investors and funds, as well as private investors.**

Through a bird’s-eye view of the coffee market and sector, i.e. from a **macro-economic perspective**, we can focus our attention on macro conditions that might suggest the need for intervention in the form of an investment vehicle. While this macro perspective is useful for identifying how the sector is progressively moving towards concentration in the largest and most efficient coffee producing countries, it may in itself be insufficient when advocating for intervention in the form of a new investment vehicle. We will take a devil’s advocate point of view and present

⁵ The research carried out by the LSE team under the leadership of Prof. Macchiavello, was far more comprehensive and for the purpose of the report only a few key elements have been integrated.

familiar arguments for why markets tend to generate efficient outcomes and allocate resources adequately. However, even a devil's advocate position leaves the **door open to a rationale for interventions**, e.g., to subsidize global public goods such as R&D to develop more productive and climate-resistant varieties.

The **micro-economic perspective** presented, on the other hand, provides a much stronger foundation in terms of a **rationale** not only **for intervention** in general, but specifically in the form of a new investment vehicle such as the one discussed here.

III.2 A bird's eye view of the coffee market/sector

Macro-economic perspective: A coffee production concentration cycle

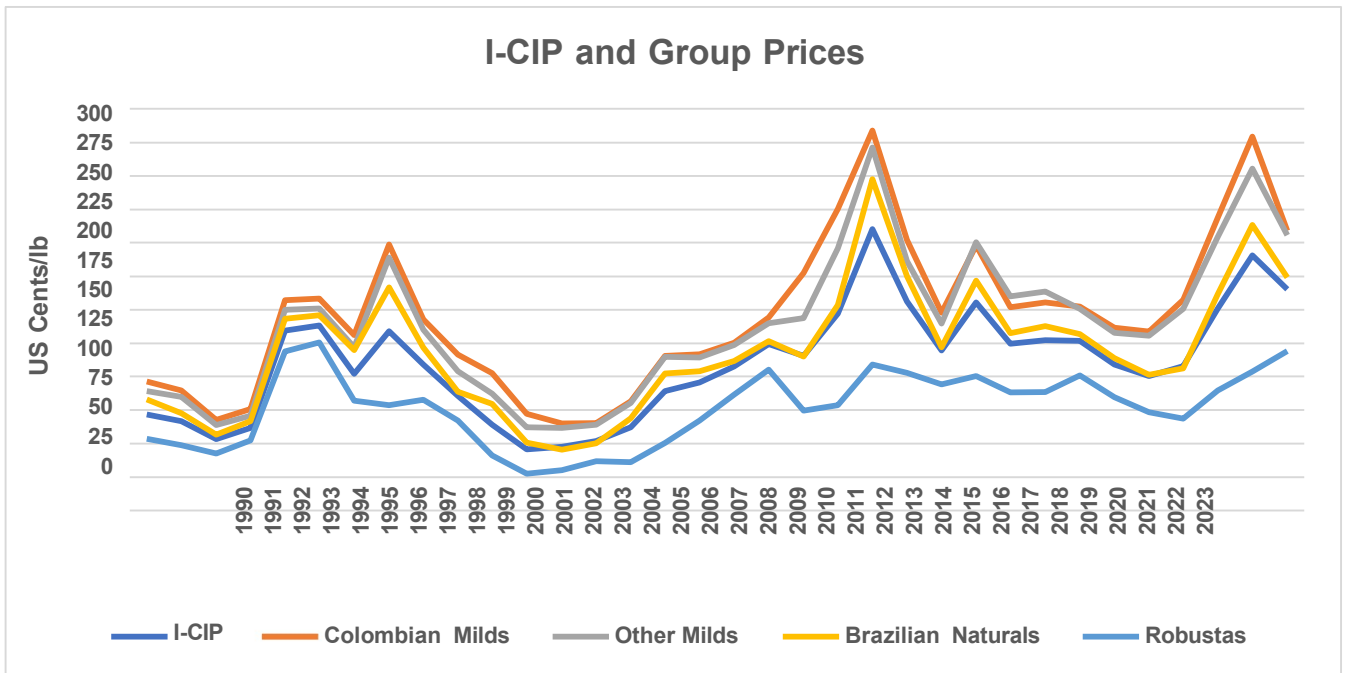
Let us begin with a bird's-eye view of the coffee sector. Based on the analysis carried out, it is estimated that around 3 billion cups of coffee are consumed daily. This global demand is projected to grow over the next two decades. At the same time, as global demand increases, global supply is projected to decrease. This is due to several challenges. **The two main challenges are climate change and other structural constraints faced by farmers, particularly smallholders, in the countries of origin.** On the one hand, climate change is predicted to make many areas currently under coffee cultivation less productive, if not all together unsuitable. On the other, the global supply of coffee is highly fragmented. Smallholder farmers characterize supply in many origins. It is estimated that there are **between 12.5 and 25 million farmers for which coffee is the primary source of income**⁶. Many of these farmers fall below the international poverty line and are thus at a disadvantage when it comes to investments geared towards upgrades and adaptation in the face of climate change.

In this context of a global market in which demand is growing and supply faces challenges, we can expect prices to increase. That said, as illustrated below, **over the last 30 years the nominal price for coffee in international markets has not increased substantially and, arguably, the real price has decreased.** Furthermore, input costs increased, and the price of coffee has been highly volatile, further hindering farmers' incentives to invest in their plantations.

What might explain such a pattern? We conjecture that the sector is experiencing a coffee concentration cycle under significant external pressures. As mentioned before, the first step in this cycle is the presence of **large disparities in productivity, i.e. yields per hectare, across countries.** This tends to **concentrate global supply in a few larger and more efficient origins**, reducing the scope for differentiation, increasing competitive pressures, and ultimately leading to lower prices. These lower prices hit those origins that had low productivity to begin with particularly hard as they reduce farmers' incentives and ability to invest, thereby perpetuating the concentration cycle.

⁶ Out of 11 million Ha of coffee land, it is estimated that smallholders may produce in about 7-8 million hectares.

Fig 8. I-CIP & Group Prices 1990-202



This coffee concentration cycle is exacerbated by **several external pressures**:

- First, the increase in **production costs** due to the increase in input costs, e.g., the price of fertilizers, which is tightly linked to shocks outside the sector, or the price of labour, which depends on demographic pressures, migration patterns and other structural developments in the countries of origin.
- Second, **climate change** and the ensuing rise in temperature is predicted to lower average yields by 7% and land suitable for coffee cultivation, particularly for Arabica coffee, by over 10%.
- Third, **new regulations in importing countries** (e.g., the EU Regulation on Deforestation-free products (EUDR)) further contribute to cost pressure in a non-neutral way across origins.

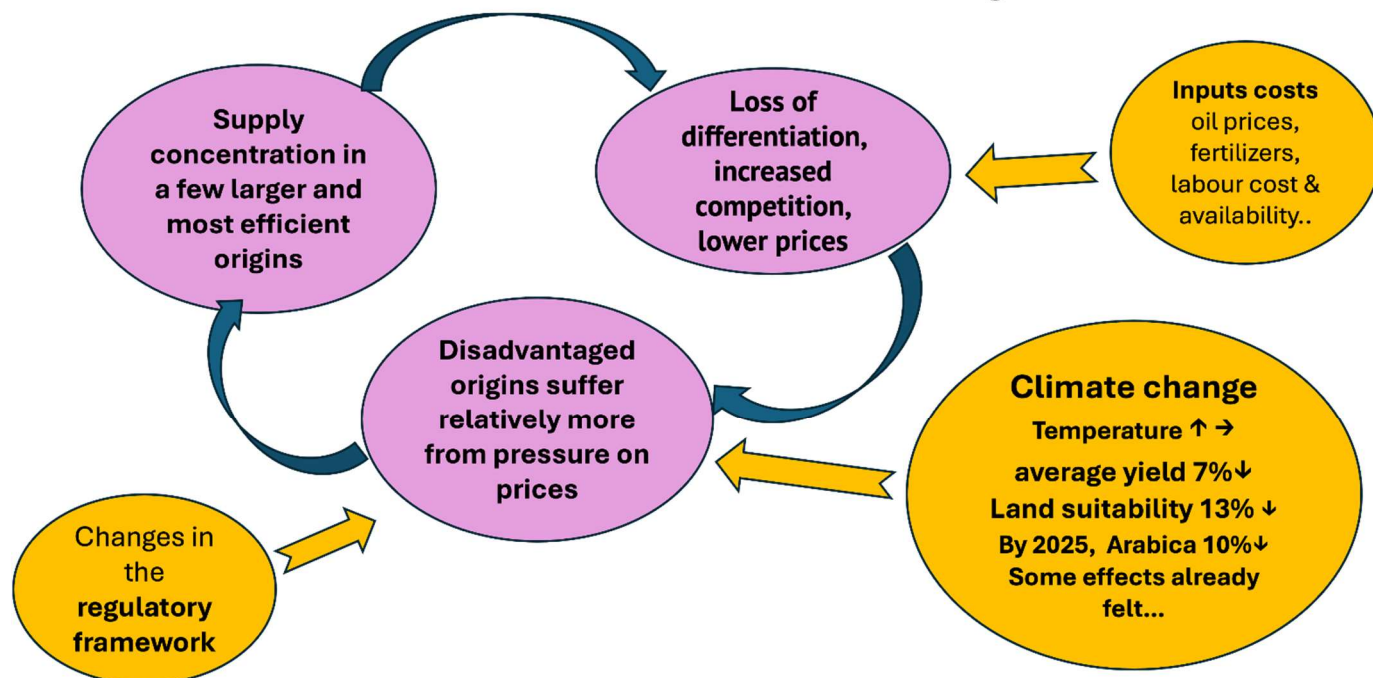
In other words, despite the increase in demand and the challenges in supply, it has been hard to discern a notable increase in prices over the long-term. While this should not be taken as a prediction of price trends in the future, it is worth asking why such a price increase has not happened. A more refined bird's eye view suggests the presence of a **concentration effect on a few coffee producing countries**.

Differences in supply conditions lead to the concentration of coffee supply in the largest and most efficient origins.

As mentioned earlier, the distribution of yields per Ha across farms is very skewed across origin countries: Vietnam and Brazil have yields per Ha that are over 10 times higher than some of the origins with the lowest yields, particularly those in Africa (see Fig. 4 above). Furthermore, in Brazil, smallholders account for around 70% of land under coffee, with an average size of around 7 Ha. Although most of the coffee produced in Brazil comes from smallholders, the average smallholder in Brazil has more land than the average smallholder in most coffee producing countries. Meanwhile, in Vietnam, smallholders account for around 43% of land under coffee, with an average size of around 1 Ha. Brazil and Vietnam's share in the global supply of coffee, as indicated earlier, has increased notably in the past decades. Globally, therefore, **sufficient coffee can be supplied to fulfil the growing demand without prices needing to increase accordingly**.

Fig 9: An illustration of the coffee concentration cycle (purple) under external pressures (yellow).

Coffee Concentration Cycle



When discussing why some countries might be significantly more efficient than others, it is important to mention the creation of the right enabling environment that offers coffee farmers better opportunities to improve their income. This environment should support and build on research initiatives that help improve productivity and efficiency, promote efficient farming practices tailored to the local reality, introduce, and use new, improved and climate-resistant coffee varieties, and create the right incentives for smallholder farmers to adopt these practices. Additionally, local policies should empower smallholders to organize and benefit from strong farmer organizations. Brazil provides a concrete example of how such policies can significantly increase productivity, improve efficiency and build a stronger agricultural sector.

Looking a bit further ahead, however, **concentration in a few origins** will: (i) further depress prices by suppressing differentiation; and (ii) make the sector less resilient, as shocks to any of the large origins cannot be compensated in the short run if many farmers have abandoned coffee cultivation in the other origins. To complete the cycle, **external pressures**, such as climate change, trends in input prices and new regulations **hit hard on the smaller farms** that characterize supply in most coffee origins. Low prices imply that **farmers have too few resources and incentives to invest to adapt/mitigate the impact of climate change and might either abandon the sector or remain in poverty**. This would further contribute to concentration in supply, perpetuating the cycle.

The devil's advocate position

While surely concerning, this concentration cycle does not provide *per se* a strong rationale for policy intervention in general and, more specifically, for an investment vehicle like the one discussed here. **From a macro perspective, the main counterarguments against policy intervention would be that well-functioning markets tend to concentrate supply among the most efficient suppliers** – in this case, those with highest yields/lowest costs.

With **higher yields per hectare, less land must be used to fulfil a certain demand for coffee**. That land can then be used for something else. Of course, the argument becomes more nuanced when we think of people engaged in production as opposed to land. But, generally speaking, it would seem a task for national welfare states to support incomes and facilitate sectoral transitions for those who “lose out” from trade. The reality is that this does not happen adequately; however, it does not provide a rationale for the investment vehicle discussed here. It may provide a rationale for philanthropic efforts, or for other policies, e.g., various forms of social security, to ease transitions out of the sector.

These arguments should not be dismissed, if anything because **public funds are scarce**, and what those arguments are saying is that we need to think hard about the **opportunity costs of interventions**. Even a position that maintains its strong faith in market efficiency, however, leaves the door open for **interventions that directly aim at correcting market failures** – such as in the case of *public goods*. Perhaps the most important public good in the industry is R&D to develop “better” varieties. A recent report by WCR, for example, estimates \$250-450 million needed for R&D in the sector to face climate change.

World Coffee Research (WCR) estimates that \$250-450 million is needed for R&D in the coffee sector (2023)

Micro-economic rationale for an Investment Vehicle

In sum, the macro perspective – despite all its complexities and nuances – probably does not provide the strongest rationale for policy intervention in the form of an investment vehicle as the one discussed here. We now turn to a **micro perspective**, which is rigorously anchored in an understanding of the industrial organization (IO) of the coffee sector and argue that such a perspective provides **a much stronger foundation for the kind of intervention discussed here**.

To articulate the argument, let’s start with a simple representation of the coffee value chain, illustrated below.

Fig 10 - A stylized depiction of the coffee value chain.



This simplistic representation of the chain highlights how coffee flows from the (smallholder) farmers to an exporter, then an importer, and finally to roasters and retailers (and consumers).

A first important way in which the coffee chain deviates from the ideal benchmark with perfectly functioning markets is **market power**. Actors that have market power at a given stage do not take prices as given. If buyers at a given stage have significant market power, that will tend to reduce the price received by the producers and, consequently, lower incentives to invest. However, despite much discussion about market power in the coffee sector, there are few reliable studies that document how much it impacts prices at different stages of the chain.

The coffee chain is probably best described as being characterized by bilateral oligopoly at most stages. For example, it is often the case that, **at the export gate, there is a higher concentration among exporters than among foreign buyers**, suggesting that market power in the domestic portion of the chain in the exporting origin might be a bigger driver of prices eventually paid to farmers than the market power of large, global, trading houses and

roasters. At the farm gate, however, there often are many small farmers that sell coffee to relatively few first-stage processors and the market power of buyers might be a significant concern. Even in such contexts, however, the presence of small traders and arbitrageurs (the so-called competitive fringe) has the potential to force larger processors to pay “competitive” prices that are in line with those prevailing in the international market – at least for conventional grades of coffee. **Given the lack of convincing evidence on how buyers’ market power along the chain impacts prices, we will thus omit it from the discussion for now and focus on other potential distortions that hinder market functioning.**

Consider, for example, the **incentives and ability of farmers to invest in their coffee farms**, e.g., by planting new trees with improved, weather-resistant varieties to mitigate the negative impact of climate change (of course, the argument developed here extends to other types of investments). In deciding whether to re-plant new trees (or carry out stumping, or whichever other practice aimed at increasing the supply of coffee), **the farmer compares the costs of the investment against its returns.** On the benefit side, there is the increase in yields/production multiplied by the margin. On the costs side, there are the costs of the investment. **The investment we are considering (e.g., planting a new tree) takes years to mature.**

So, we need to think in terms of *net present value* (NPV). The farmer discounts future income streams at a certain rate, which is inversely related to the interest rate at which (s)he can borrow. Because **many smallholders in many origins have difficulties in accessing credit because of weaknesses and high interest rates and transaction costs in financial systems, and a significant lack of collateral** (more on this below), they typically borrow at high interest rates, if at all. Farmers then tend to heavily discount the future, i.e., they make choices that might seem short-sighted to an investor who can borrow at much lower interest rates. Investment is also associated with significant uncertainty, so we need to think in terms of *Expected NPV*. The farmer holds some information at the time of investment, but (s)he needs to think about what will happen to prices, yields, costs, etc. **The average coffee farmer is small and typically cannot perfectly diversify the risk of her/his investments** (coffee is a significant share of her/his income and insurance products are typically unavailable).

The farmer is thus typically “risk averse”. In other words, while (s)he likes more income on average, **reducing income of one dollar is much more painful when the income is low**, and it is difficult to put food on the table, than when it is high. A typical farmer will thus forego (profitable) investment opportunities if they lower his/her income at times in which (s)he is (likely to be) struggling. One important implication of this logic is that, in practice, when considering **replanting schemes**, the bulk of the costs of the investment, from the point of view of a poor farmer, is how to **replace the temporary loss in income in the first few years after replanting.** In other words, **the NPV from replanting a tree calculated by a diversified investor that borrows at low interest rate is much higher than the NPV calculated by the farmer.**

Returning to the diagram depicting the coffee chain in Fig 10, the **presence of market power implies that the additional coffee generated by the farmer’s investment generates profits for all other stages of the chain as well.** In other words, imagine that there was a *vertically integrated* company that operated all stages of production. That company would not invest if the farm-gate price was sufficiently high to recoup the investment and yield a positive NPV, but if the additional profits considering all the subsequent stages yielded such a positive NPV. In practice, there are many (good) reasons why the chain is *not* vertically integrated up to the farm level. However, examples of this logic already exist. For example, Macchiavello & Miquel-Florensa (2020) as presented in Box 4, interpret the AAA Program in Colombia as a *vertical restraint*, a contractual arrangement that mimics the pricing that a vertically integrated structure would put in place. What this logic suggests, however, is that the farmer’s investment generates a *positive* (pecuniary) *externality* for the chain as a whole and, therefore, the farmer underinvests relative to what would be efficient from the sector’s perspective.

In sum, a **micro-perspective provides two strong rationales** not just for intervention in general, but for an intervention structured around a **new investment vehicle** dedicated to **coffee, blended** with direct engagement of the largest **private companies** to mobilize further investment:

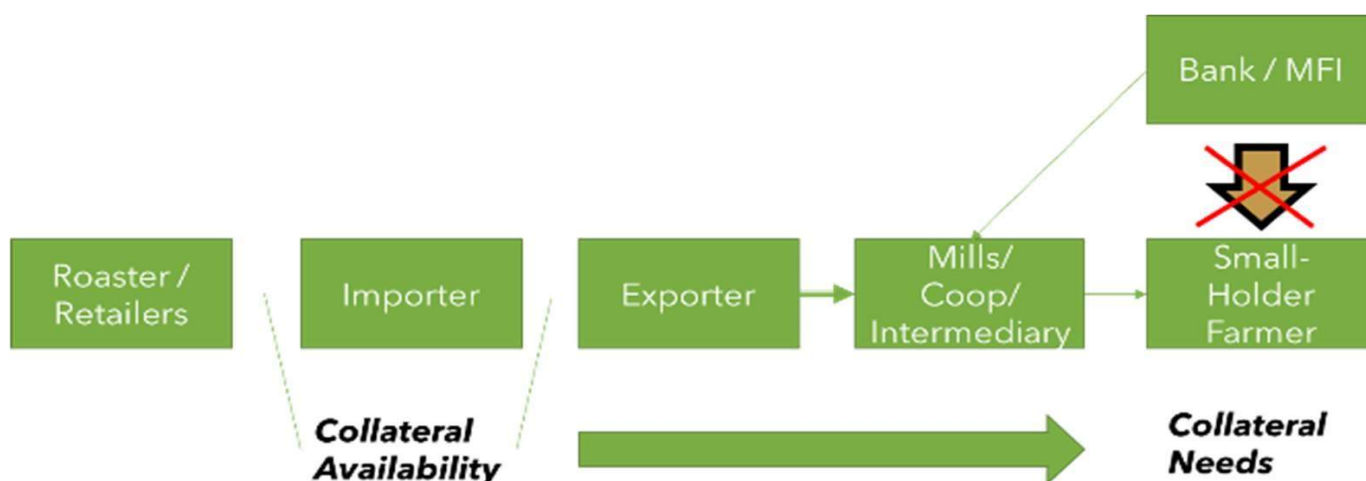
- (a) **Farmers underinvest due to farm-level constraints:** Taking prices as given, farmers have higher discount rates relative to a (diversified) investor borrowing on international capital markets; and
- (b) **Farmers' valuation does not internalize the value of coffee for the chain as a whole:** Due to market power, farm-gate prices do not reflect the entire value created by coffee in the chain.

These two reflections combined provide a rationale for the type of financial vehicle discussed here. Therefore, the proposed new investment vehicle (IV) is blended with the direct engagement of the largest private companies to mobilize further investment.

The quest for collateral

Regarding the key constraint preventing coffee farmers from accessing capital, even if it may be abundant, **collateral** –that is, *trust*– is scarce. Therefore, **it is critical that the IV's implementation puts the quest for collateral at its core.** Trust built in *commercial relationships* is a key source of collateral. The IV could work with accredited large corporations who participate in it. These actors involve selected/accredited suppliers/local subsidiaries/partners in investment selection and implementation. Investment is mainly focused on (groups of) *farms*, either plantation upgrading or commercialization interventions (e.g., single origin, traceability, etc.). Other funds target capital for MSMEs (e.g., local mills, consolidators, exporters, coops) and perhaps could collaborate with those rather than starting from scratch. The IV should explicitly leverage the opportunities created by the changing *regulatory landscape*. **Increasing due diligence requirements imply that companies and national authorities alike are investing in digital infrastructures that support traceability and this may have a positive effect, since data captured in these initiatives can support the quest for collateral described above.**

Figure 11 - Misallocation of collateral in the coffee supply chain.



In light of the foregoing, a new coffee financial vehicle would be justified for two main reasons:

Box 3 – Main reasons for setting up a coffee financial vehicle

The quest for collateral

The new C-SR/IV should focus on expanding access to capital markets for investments in coffee farms. There are structural reasons why farmers' valuation of farm investments, even taking prices as given, is inadequate.

For example, farm investments are risky, and poor farmers have inadequate collateral; their cost of capital entails a significant risk premium. A specific focus of the IV should thus be the creation of collateral. While investment needs are upstream, collateral (i.e., trust) resides downstream.

The most likely way to create collateral is through supply-chain relationships, with various forms of value-chain finance. This is the first reason why the new IV should directly involve the largest private companies in the sector as they are the ones which, through their purchasing, can most effectively create the collateral.

Vertical integration in the C-GVC

We consider that there is underinvestment from the point of view of the overall chain. This would not be a problem if the chain were vertically integrated. But, for good reasons, it is not – retailers/roasters/traders focus on their core competencies, and vertical integration into farming is not an option in many origins.

Vertical integration could, in principle, be replaced by contractual arrangements – vertical restraints with exclusivity clauses. But such arrangements are extremely hard to enforce due to opportunistic behaviour (side-selling). They are also perceived as anti-competitive practices by regulators.

This implies that no single company, no matter how large, has the incentives to promote on its own the required investments.

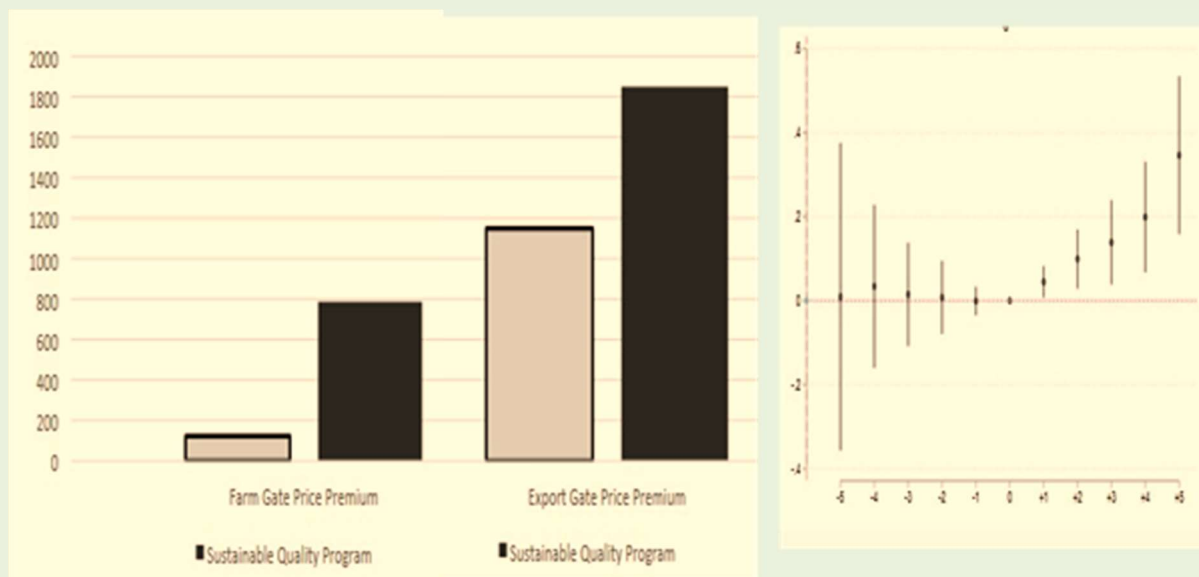
The need for a pre-competitive IV in which multiple private companies participate is not just needed to scale-up towards mobilizing further funding, but also to create the necessary incentives to disburse loans effectively and ensure adequate repayment.

Box 4: An almost vertically integrated example.

Macchiavello and Miquel-Florensa (2020) study the **Sustainable Quality Program in Colombia**, leveraging existing admin data compiled through a research partnership with the *Federación Nacional de Cafeteros* (FNC), the local coffee board. The buyer involved in the programme exclusively sources supremo quality beans. At baseline, however, **farmers receive essentially no price premium at the farm gate for these beans despite a 10% differential at the export gate**. This poor transmission of quality premia at the export gate to the farmer gate has been documented in several other coffee chains and is not unique to the Colombia case during the study period (2004–2015). The **absence of a price premium lowers farmers' incentives to upgrade, i.e., plant newer/healthier/more resistant varieties**.

The programme in Colombia introduces a **prime premium at the farm gate (while also paying a higher price premium at the export gate)**. This is a form of *vertical restraint*, i.e., a contract in which the agreement at one step of the chain (here, at the export gate) includes provisions on prices at another stage (here, the farm gate). In addition, it supported farmers upgrading through training and seedling. The programme had a 40% take-up, with eligible farmers replanting trees and increasing the area under coffee cultivation. This resulted in a significant increase in the production of supremo beans. Estimates from a structural model reveal that farmers' incomes increased by at least 15–20%. Although the training and input support played a role, estimates suggest that the vertical restraint was key in fostering upgrading.

Not all buyers demand high quality and can credibly promise, pay, and enforce significant price premia. This kind of programme might not be replicable in other contexts. For our purpose, it serves as an example of the potential benefits of upgrading from the point of view of a *vertically integrated chain*.



The Figure is taken from Macchiavello and Miquel-Florensa (2020). The left panel portrays the average price premium for supremo coffee at the export gate and the farm gate over the period 2004–2015 in Colombia. The light brown bars represent the price premium for transactions outside the Sustainable Quality Program and the black bars the premium for transactions under the programme. The right panel reports (intention-to-treat) difference-in-differences estimates of the increase in an index of quality of the coffee tree plantations in villages (veredas) in which the Sustainable Quality Program was progressively rolled out over time. The programme led to substantial replanting of better varieties and to an expansion in the land under coffee cultivation.

III.3 Size of the investment vehicle

We now turn to the question of **how large the proposed IV should be**. The short answer is that, at present, we do not have enough information to come up with a reasonable estimate of the investment needs that the IV would need to support. The initial analysis carried out to prepare this report conducted several calculations that aim to quantify the relevant investment gaps starting from micro-data. All the approaches that we were able to pursue with available data and within the required timescale are rather unsatisfactory. **Any estimate is, therefore, highly speculative**. The focus of this section is to highlight the current information and data gaps to perform better calculations.

Lack of detailed and comprehensive data. There are two key ingredients to estimate the total investment gap. First, we need to know the **costs of the proposed intervention**. Second, we need to know the **impact/returns of those proposed interventions**, to focus on those that have positive value. Due to the **enormous heterogeneity of farms both across and within origins**, disaggregated information from a variety of contexts is needed. It transpires that, to the best of our knowledge, information does not exist for costs nor for impact/returns.

Box 5 – Reasoning for an investment vehicle

Is a new IV needed? Due to contracting problems and market power, farmers' valuation of investments on the farm does not reflect the true value of those investments from the point of view of the coffee chain.

Why would individual companies' programmes not be sufficient? Because it would be impossible to enforce the contractual arrangements (vertical restraints, exclusivity clauses) required to underpin the investment for a variety of reasons. (There are also economies of scale in loan origination and in design/monitoring/evaluation).

Why not simply scale up existing facilities? Because the involvement of large companies at a pre-competitive stage is necessary to create the required collateral through adequate value-chain financing schemes. (E.g.: through the creation of an internal "credit registry" that keeps track of borrowers that default on loans and commits members' companies and their suppliers not to source from those defaulting borrowers).

One of the dimensions analysed was related to coffee producers' living income. Some information was available through the Coffee Barometer, based on the Columbia University paper and ICO data, as well as other sources. However, it was difficult to aggregate data using different metrics.

Within the CPPTF, living income benchmarking studies were carried out in several producing countries but these were not available when this report was prepared. Detailed assessments have been carried out in **Mexico and Rwanda also with the objective to develop a robust system to assess cost of coffee production at origin as well as to determine the living income and the actual gap. A plan to close the living income gap is being developed and short/medium- and long-term term investment required are under preparation.**

On the cost side, the vast majority of the **needs of the IV will be for renovating coffee plantations**. A key takeaway from the previous chapter is that a very significant part of the costs relates to the **temporary loss of income for the farmer and the implicit interest**

rate at which the farmer values such a loss. In other words, when it comes to supporting renovation of the plantation (e.g., through loans offered with a subsidized guarantee), knowing the agronomists' estimates of the actual costs (seedling, fertilizers, labour) needed for the renovation work is not sufficient because farmers, especially the poorest in the most disadvantaged origins, will need to borrow to compensate for the (temporary) income loss. **If subsidized loans are offered at an amount that does not consider this aspect, it will only be larger farmers** (who might have invested anyway) **that will take up those loans**. The resulting targeting might thus concentrate support towards farms that are already commercially viable. This might be undesirable on equity grounds, but even if equity concerns

were not relevant, a subsidy that predominantly goes towards farmers who would have invested anyway would have poor additionality properties.

As mentioned earlier, there is also very **limited evidence on the impact/returns of existing “sustainability” programmes**. While this information is not directly needed to estimate investment gaps, it is nevertheless essential that (scarce) public funds be directed at programmes that work. A recent report by Del Prete et al. (2022) provides a comprehensive assessment of the experimental and quasi-experimental studies that evaluated the effectiveness of programmes along the coffee value chain. The report highlights how several interventions and programmes, like extension services, fertilizer subsidies, and training, have been deployed in agriculture to improve farmer livelihoods. In the coffee sector, certification systems and buyer-driven sustainability programmes have been a popular approach to address what many see as a critical issue for the coffee industry, but surprisingly, **very few of these have been rigorously evaluated**. Despite their importance, there has been a **lack of a systematic review of programmes and interventions in the coffee sector**.

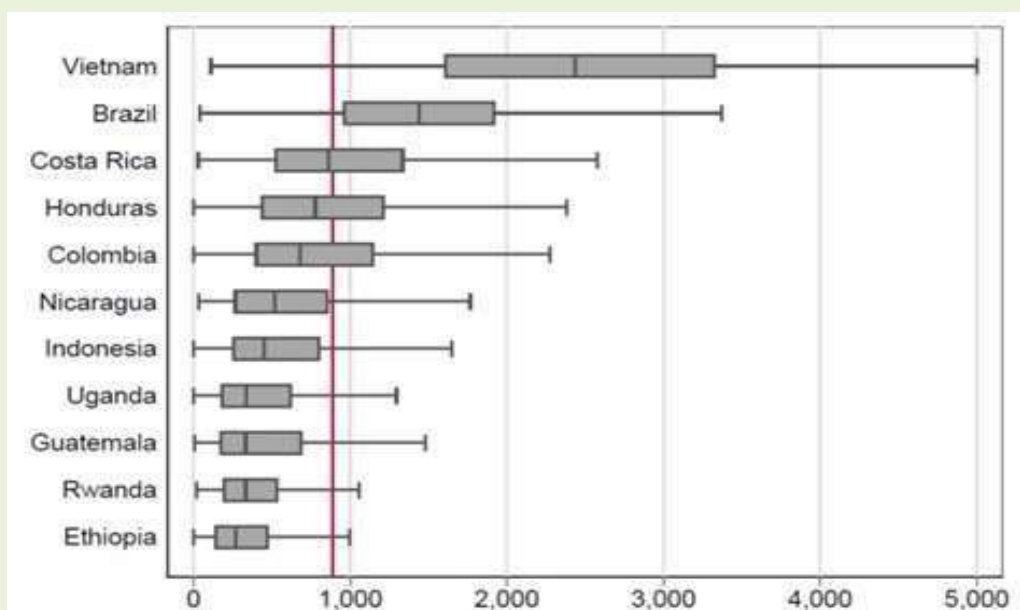
As said, due to the enormous heterogeneity of farms both across and within origins (See Box 6 below), disaggregated information from a variety of contexts is needed. This information is costly to collect in a coordinated manner. Because such information is a public good, it will not be spontaneously provided by the market. Beyond the limited incentives to collect the information, there are limited incentives in the industry to have programmes rigorously evaluated and share the lessons, particularly in those cases where the programme does not deliver the intended results and impact. There is thus an **abundance of “success stories” and programmes with high impact/returns, but few that are backed up by rigorous, independent evaluation**. This is problematic because in a situation in which most programmes are presented as being impactful, well-documented “failures” are opportunities to learn the most.

These considerations suggest that a concrete next step to address these challenges is to enhance the ICO as a Global Knowledge Hub (GKH) for the coffee sector in partnership with all key stakeholders who are already engaged with and form part of the objectives of the CPPTF. Therefore, it would provide statistics and information on farmers’ living income and cost of production, integrating data from the Global Coffee Platform (GCP), SCC, WCR and by industry as well as the Food and Agriculture Organization (FAO) and the World Bank.

A **pre-competitive forum**, supported by academia, in which information is collected and shared, may also **contribute to discuss: (a) detailed information about the costs of renovation programmes that take into account the costs of replacing farmers’ temporary loss in income; and (b) rigorous evaluation**, ideally through randomized control trials, of sustainability programmes that have shown significant results. This forum would focus on gathering and sharing critical industry information to be integrated into the **ICO framework as a GKH**.

Box 6 - The key role of heterogeneity

A *micro lens* highlights heterogeneity as the defining characteristic of the coffee sector. There is **enormous heterogeneity across as well as within origins**. For example, the figure below (taken from Blouin et al. (2023) and based upon Enveritas data) illustrates differences in coffee yields per Ha *across* and *within* countries. The vertical bars for each country illustrate different percentiles of the distribution across farms. Focusing on the interquartile range (p75 vs p25) we see how heterogeneity within countries is comparable to heterogeneity across countries. Similar patterns emerge when considering land size. This heterogeneity has important implications for the calculation of the size of the IV but also, and perhaps more importantly, for its disbursement strategy. This underscores the need for customized approaches that consider the unique characteristics and needs of different farming areas and practices within the coffee sector.



Dispersion in coffee yields per HA across and within origins. Source: Blouin et al. (2023).

III.4 What should be the objectives of an investment vehicle?

The **enormous heterogeneity in farm sizes and yields across and within origins** also raises the question of what should be the IV's objectives. If the aim is to improve the environmental sustainability of grown coffee, then the IV should focus on a few large farms and origins that produce the vast majority of coffee. These farms are larger, concentrated in a few origins, and face a lower number of structural constraints. Investments in these farms entail relatively low origination costs and likely yield economic returns at or close to the market rate. These farms are easy wins, although one might question the additionality of IV investments in such farms.

If the aim is, instead, to support investments on farms that face the highest number of constraints, then those are in a wider range of origins, have significantly higher origination costs, and operate in environments with binding institutional constraints. There are also farms that are likely not economically sustainable no matter what, e.g., due to their size, or the geographic environment. **There is a question of whether IV funds should also be targeted there.**

To define the target groups and beneficiaries for an IV for the coffee sector, a recommendation would be **to take a portfolio approach**. The concept of the *efficient impact frontier* (McCreless (2017)) is useful in this sense. The concept is illustrated in Figure 11 and Box 7 below. On the vertical axis, projects are ranked based on their monetary returns. On the horizontal axis, investments are ranked based on their impact, of which additionality should be a key attribute. Each potential project can then be represented as a point in the plane. For example, project A has relatively high financial returns (e.g., low risk, good collateral, etc.) but relatively limited impact (e.g., in the absence of the IV the project would still be funded by a different source of capital). In contrast, project B has very high impact (e.g., a small farm in an origin with particularly difficult access to finance), but low expected financial returns (e.g., limited collateral, high risk of default). Hypothetical project E, with high financial returns and high impact, would not exist. Hypothetical project D should not be funded, since it has lower financial returns and impact than project C. In other words, an optimal portfolio only funds projects on the frontier, and achieves the mix of projects of types A, B and C so as to generate the minimum (expected) returns r requested by concessionary investors.

Box 7 - The Portfolio Approach - Investment Tracks

Given the profound heterogeneity across origins, and across farmers within origins, and building on the portfolio approach outlined above, the IV could mix three (or more) investment tracks:

Investment R: Large farms/plantations in big 3 origins that account for a high proportion of coffee produced and Ha under cultivation:

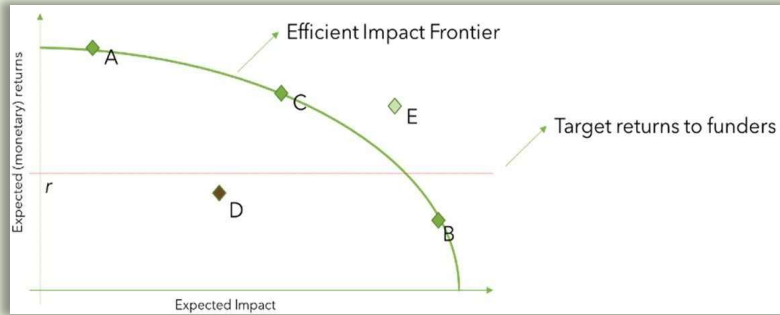
- Large-scale origination costs per \$ lent, higher (commercial) collateral, higher returns
- (Possibly exclusive focus on environmental sustainability/carbon sequestration investments).

Investment I: (groups of) small-holder farmers in disadvantaged origins:

- Investments towards farm and/or commercial upgrading of small- and medium- farms
- Investments through supply-chain linkages to maximize synergies and ↓ origination and implementation costs;
- Lower collateral, lower returns must make a case for high expected impact.

Investment G: grants for R&D, innovation, evaluation, testing of new ideas/models, etc.

Efficient Impact Frontier, an illustration – Portfolio Approach



These considerations hold even in the case of the disbursement of both loans and grants. **There is little, if any, rationale for grants on farms that are structurally unsustainable.** Grants cannot replace the lack of social protection. **Grants should focus on supporting activities generate public goods** (e.g., R&D, testing, etc.). This is especially important when noting that – in many contexts – we do not know what actually works, and we do not know how to do it.

Implementing the **approach requires a consistent investment assessment prospect on both expected financial returns (easy) and expected impact (harder).** The challenge is *not* in the design of the expected impact scoring criteria since standards have been developed in the sector and could be taken off the shelf. Unfortunately, in many cases, (expected) impact is measured in terms of potential beneficiaries – not in terms of *additionality*. The main challenges will be in the implementation, as it requires consistent and detailed data collection, which can significantly increase cost. For this reason, **synergies with sourcing operations and compliance with new regulations (e.g., EUDR) should be exploited to reduce origination costs.**

Coming back to the question of the **size of the IV**, still, we have attempted to estimate investment needs starting from micro-data. The **overall strategy** is quite simple and shall consider four steps:

- (a) Assume a certain **target of income (living income** estimates, international poverty thresholds, etc.);
- (b) **Measure gaps for each farm** (based on micro-data) across different origins. However, heterogeneity implies that large **differences in gaps** exist even within origins;
- (c) Calculate by how much **yields or farm gate prices** or the **cost elements included in the living income** should increase/decrease to fill the gap (inputs costs, access to health, education, housing, physical infrastructure, etc.);
- (d) Calculate the costs of implementing interventions that would generate those gains and fill the gaps.

As mentioned above, the **key constraint is lack of information** on the two ingredients required for step 4 (costs and gains). The general view that emerges from this exercise is that:

- (e) For many farms in the most disadvantaged origins, gaps are enormous. That is, farm sizes are simply too small to generate adequate income, even when taking conservative target thresholds.
- (f) There is very little evidence of the returns from investments/interventions and on the required costs.

This last observation is critical given the **volume of resources already spent on “sustainability” interventions.** Our preliminary analysis was undertaken using data from the ICO sustainability projects mapping database (See Annex III). **The dataset confirms that private actors in the coffee sector are already heavily involved in supporting sustainability programmes.** Furthermore, the analysis reveals **extraordinary differences in the cost per farmer reached across different projects.**

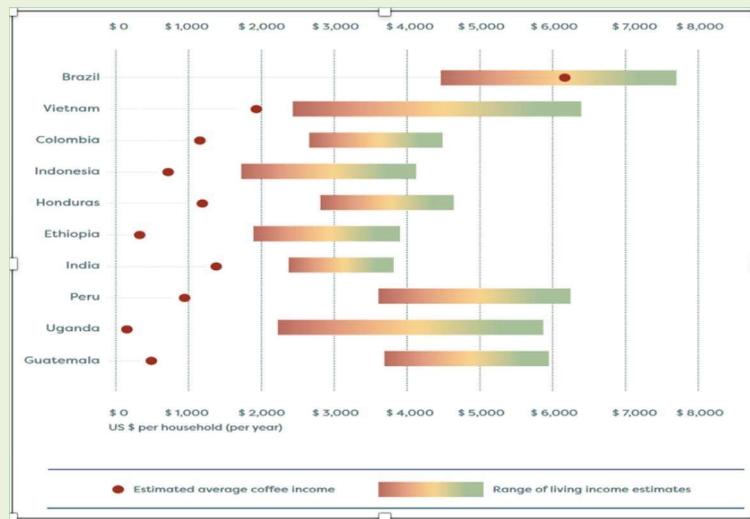
III.5 Preliminary estimates of the investment needs of the coffee sector.

We recognize that **the coffee sector continues to grow in terms of production and consumption. However, structural issues must be addressed**, such as ensuring a healthy balance between supply and demand and sound value distribution among all engaged actors, as well as mitigating and adapting to changes in climate conditions and in the regulatory framework. **Therefore, to effectively carry out a true sector transformation, a larger and more consistent flow of capital is required to: (i) address urgent and structural issues; and (ii) invest in its long-term sustainability.** This implies the necessity to estimate the investment needs for the global coffee sector based on

the main considerations presented below.

Box 8 The living income gap

This figure is taken from the recently published Coffee Barometer 2023. It confronts current income levels for representative farms against living income ranges. The gaps are enormous. In the Annex we report our own calculations, using different data sources, and reaching the same conclusion. We are not aware of any bundle of interventions that comes remotely close to filling this kind of gap.



Let's now look at current estimates of investment needs. In 2019, a comprehensive **assessment of the sector's investment needs was carried out, leading to the development of a proposal to set up a Global Coffee Fund⁷ (GCF)** by Columbia University for the World Coffee Producers Forum (WCPF) (Sach et al. 2019). Specifically, that assessment and proposal suggested that **each coffee-producing country should set up a National Coffee Sustainability Plan (NCSP)** which accounts for differentiated needs, challenges, and opportunities within the country. Regarding the proposed **GCF**:

- it should be financed by the main coffee industry actors and used to leverage additional public sector funding, to enable stakeholders to implement activities under the NCSPs;
- it would serve as the backbone to the intensive multi-stakeholder efforts needed to make coffee production sustainable and to support coffee-growing regions to achieve the SDGs; and
- it would be a pre-competitive effort, with contributions from the main coffee industry actors, including roasters, retailers, and traders and it would be complemented by: farm funding by bilateral and multilateral donors; increased commitments in the national budgets of coffee-growing nations; and commercial investments by the private sector within their own value chains.

The Sachs report indicated that the **funds needed to make considerable progress on achieving the SDGs in coffee-growing regions, through the activities discussed above, are in the region of US\$10bn per year.** The precompetitive

⁷ The Sachs report used the 2018 global export number of 7.3bn kg of green coffee, indicating that this would determine an amount to 34 cents per pound of green coffee contributed to the GCF, which is in the range of 0.25 - 0.50 cents per cup. In other words, the targeted level of funding recommended would require no more than half a penny per cup sold.

contribution by the industry would not be expected to cover purely public goods and services, which are primarily the remit of government (e.g., health and education) and could instead be covered by leveraged public funds. It **further provisionally suggested a goal of raising \$2.5bn per year through pre-competitive private sector contributions to the GCF, to be matched by bilateral and multilateral donors** for work in coffee-growing regions, and that it also be matched by **national budget outlays of producing-country governments** on programmes that support SDG achievement in coffee-growing regions. This matching **annual funding would create an additional \$5 billion** to put towards causes such as improved access to basic services in coffee-growing regions and strengthened efforts to support farmers and workers. The WCPF is actively working on the methodology and the testing of NCSPs.

The **research carried out here** also tried to answer the question of the size of a coffee sustainability and resilience fund/vehicle. The LSE team conducted a variety of exercises starting from micro-data and defined a “simple model”. However, as stated, it realized that fundamentally, the **information needed to answer that question is currently not available** to quantify the scale of the IV with the risk of producing estimates of investment gaps that are unrealistic and hinder dialogue and progress of industry initiatives. Nonetheless, initial indications are provided below to facilitate further discussion on the global funding mechanism.

The analysis, based on a number of studies on age of coffee plantations and impact of climate change on the coffee sector, clearly showed that a significant part of investments should be allocated to the renovation of coffee plantations and covering the costs of the temporary loss in income for the farmer, taking into account the implicit interest rate at which the farmer values such a loss. The model developed by the LSE team included the assessment of investment needs to upgrade production and productivity, achieve gender equality, while other needs related to price volatility and the changing regulatory framework could not be effectively quantified. The preliminary analysis (see Box 8), with all the caveats mentioned above, clearly indicates action and funds would be required to build resilience and sustainability of the C-GVC:

Very preliminary and broad estimates of the cost of improving productivity for 25% of the farm-land each year (excluding the Big 3) are as follows:

- **\$256.2m per year to bring all farmers to 75th percentile yield**
- **\$593.2m per year to bring all farmers to 90th percentile yield**

Another key factor considered in our analysis were the **recent estimates by WCR regarding the estimated cost of battling the effects of climate change** (Mywish K. Maredia and Jose Maria Martinez, Michigan State University (MSU), 2023):

- **\$246m per year (Reality Check - Low)**
- **\$452m per year (North Star - High)**

As a purely indicative figure, without considering that interventions and investment on productivity would also cover climate change and vice-versa, the range of yearly investment **would tentatively range between \$256.2m to \$1.04b per year**

According to the WCR/MSU paper, **underinvestment in R&D drives instability, consolidation, and loss – fewer farmers and fewer countries growing coffee, and greater supply instability.** WCR has quantified the need for up to \$452 million more per year to be invested in coffee agriculture R&D to preserve origin diversity across many countries and support farmers to adapt to climate change. The MSU/WCR economic model provides a rational basis for understanding the true size of coffee’s agricultural R&D gap in the face of rising demand and climate change. This combination of demand and supply factors in the long run should be a cause of urgent concern for the whole industry. **If current trends continue, the sector will be unable to meet the world’s growing demand for coffee, let alone ensure that coffee production is economically and environmentally sustainable.** Increasing global investments in coffee R&D to accelerate innovations across multiple countries can help reverse this trend and support the coffee sector to keep up with growing consumer demand and respond to the challenges of climate change and poverty, while avoiding further consolidation of production.

The MSU/WCR paper also states that **coffee’s current level of investment in agricultural R&D is shockingly low,** estimating that current total agricultural R&D investments in coffee for the global south total amount to **about \$115 million (in constant 2020 US dollars).** It also estimates that **90% of these investments are made by the public sector and 10% by the private sector.** As a general rule, R&D investments in different commodities should be allocated proportionally to their market value (Fuglie, 2022) and for the coffee market the total value of green coffee makes up about 4.8% the of total value of agricultural output in the 45 countries included in their analysis. Coffee should therefore make up a similar percentage of agriculture sector investments in these countries, yet today the investment amount is a mere 1.8%.

Box 9 – Investment required – tentative conceptualization with a select group of origins

Country	Number of Smallholders	Upgrading all farmers to 75th%ile	Cumulative	Upgrading all farmers to 90th%ile	Cumulative
MEXICO	500,000	54.1	54.1	126.9	126.9
PNG	400,000	26.9	81.0	48.9	175.8
ETHIOPIA	2,242,000	15.6	96.6	54.0	229.8
RWANDA	430,000	1.8	98.3	5.0	234.8
INDONESIA	1,571,500	74.5	172.8	183.7	418.5
NICARAGUA	28,000	2.2	175.1	5.1	423.6
PERU	223,000	21.6	196.7	65.2	488.8
KENYA	790,000	-1.6	195.1	-5.0	483.8
HONDURAS	102,450	25.4	220.5	53.8	537.6
COSTA RICA	26,704	4.9	225.4	13.1	550.7
Total (excl. Big Vietnam & Colombia and Brazil)	6,313,654	225.4	225.4	550.7	550.7
COLOMBIA	568,500	88.7	314.1	221.9	772.6
VIETNAM	600,500	-57.9	256.2	-179.4	593.2
Total	7,482,654	256.2	256.2	593.2	593.2

Required Investment for 25% of the farm per year under each scenario (Million USD)

- We assume that 25% of each farm, for all farmers, should be upgraded each year to 75th percentile yield (Low – Scenario 1) and 90th percentile yield (High – Scenario 2)
- Based on estimates of per Kg and per Farmer yield upgradation costs

III.6 Conclusions: Let’s set up a coffee investment vehicle

Coffee is produced in over 11 million hectares of coffee land characterized by a multitude of production systems, varieties, infrastructure, etc. Generally speaking, coffee plantations are aged and have **low productivity** in many origins, a situation exacerbated by climate change. Even excluding one-third of land in origins with medium to high levels of production (i.e., the Big 3 – Brazil, Vietnam and Colombia – as well as small specialty-coffee-centred

countries such as Costa Rica and Panama, etc.), **the remaining producing countries (roughly around 7 million hectares) would require significant investment in plant renovation and improvement of agricultural practices through circular and regenerative practices, and more efficient marketing systems.** This would allow the C-GVC to continue producing coffee in a sustainable manner, ensuring supply security and diversification, income for farmers, and satisfaction of consumers.

There is an economic rationale for a new IV dedicated to coffee, blended with direct engagement of the largest private companies to mobilize further investment. The soundest rationale arises from considering **constraints to farm investments and to vertical integration in the chain.** Because of this, the IV should take a portfolio approach and focus on the creation of collateral leveraging supply chain relationships. Heterogeneity in coffee farms both *across* and *within* origins has important implications for the design of the IV.

Our research has identified **important knowledge gaps**: we do not know enough about the costs and the returns of investments that the IV should support. Moreover, the IV should therefore be supported by a pre-competitive forum to share knowledge, rigorous testing of new investments and by a strong M&E component.

Farmers underinvest due to farm-level constraints: Taking prices as given, farmers have higher discount rates relative to a (diversified) investor borrowing on capital markets and farmers' valuation does not internalize the value of coffee for the chain as a whole. Due to market power, farm-gate prices do not reflect the entire value created by coffee in the chain. Moreover, farmers often undervalue investments on their farms due to contracting issues and market power. This undervaluation does not reflect the true value of these investments from the perspective of the coffee supply chain. It is important to recognize the real value of making informed decisions.

Programmes by individual companies would not suffice as they are focusing mainly on their suppliers and buyer/supplier contractual arrangements (like vertical restraints, and exclusivity clauses). Additionally, there are also **economies of scale when it comes to loan origination and in designing, monitoring and evaluating these programmes.** Another key issue is **related to the fact that expanding existing facilities or creating new financial schemes with the involvement of large companies/key players in the C-GVC at an early, pre-competitive stage is crucial to generate the required collateral through appropriate value-chain financing schemes.** For example, creating an internal "credit registry" can help. Such a registry would track borrowers who default on loans and ensure that member companies and their suppliers avoid sourcing from these defaulting borrowers.

Main conclusions

- The coffee sector is experiencing a concentration cycle, exacerbated by macro-economic factors;
- Heterogeneity in coffee farms both across and within origins has important implications for the design of an IV and defining its objectives, targets and size;
- Producing countries (roughly around 7 million hectares) would require significant investment in plant renovation and improvement of agricultural practices, through circular and regenerative practices, and more efficient marketing systems;
- There is an economic rationale for an IV dedicated to coffee, blended with direct engagement of the largest private companies to mobilize further investment;
- The soundest rationale arises from considering constraints to farm investments and to vertical integration in the chain. Because of this, the IV should take a portfolio approach and focus on the creation of collateral leveraging supply chain relationships;
- The WCPF/Sachs report (2019) estimated investment needs to comply with SDGs by raising \$2.5bn/year through pre-competitive private sector contributions to be matched by bilateral and multilateral donors for work in coffee-growing regions and by national budget outlays of producing-country governments. This would create an additional \$5 billion;
- WCR/MSU (2023) estimated the cost of battling the effects of climate change (WCR) to be between \$246m (Reality Check Scenario-Low) to \$452m per year (North Star Scenario-High);
- The very preliminary estimates presented here estimated the cost for improving productivity for 25% of the farmland each year (excluding the Big 3) to be between \$256.2m (to bring all farmers to 75th percentile yield) to \$593.2m per year (to bring all farmers to 90th percentile yield);
- The IV should be supported by a pre-competitive forum/group to share knowledge, by rigorous testing of new investment types, and by a strong M&E component;
- To fill knowledge gaps (cost/returns of investment), the ICO should act as a GKH for the coffee sector and provide data on investment needs and their impact in partnership with academia and all key stakeholders.

PART IV. TOWARDS A NEW GLOBAL INVESTMENT VEHICLE FOR THE COFFEE SECTOR

IV.1 Actions needed to increase funding for the coffee sector

As it emerges clearly from the analysis presented in chapters II and III above, there is a significant need to systematically address the **lack of funding for the coffee sector** and how this has a social and economic impact given that coffee farming is a major source of livelihood for millions of people in developing countries (World Bank, 2018). Access to finance is a persistent challenge, as investment in smallholder production is seen as increasingly risky, with high transaction costs and returns not able to compensate commercial investors for this perceived risk (ITC, 2022). Many farmers, especially **smallholders, are at risk of abandoning coffee cultivation due to low income, climate change, market volatility and ageing.**

This shift away from coffee could jeopardize future production and income for the entire coffee industry, particularly at the time when overall demand for coffee is projected to increase, as seen in chapter I, while supply capacity may be significantly impacted by climate change and other factors. **Meeting global coffee production demand by 2030 within the new regulatory framework and the internationally agreed objectives to fight deforestation would require a substantial increase in productivity** without increasing/transferring current coffee lands and may not be a simple or viable option.

Therefore, the coffee industry faces an extremely serious threat to secure sustainable raw material supply from resilient sources, while the livelihood of millions is at risk. Most coffee producers are climate-vulnerable smallholders who have limited resources to implement resilient practices which will mitigate the impacts of climate change as well as to increase significantly productivity and quality. As reviewed in Chapter III, the coffee sector needs urgent action to increase responsible and sustainable investment through accessing existing global, regional and national funds and, above all, by setting up a dedicated global vehicle involving all key stakeholders.

IV.2 Review of key initiatives to finance the coffee sector

A preliminary review of various initiatives proved useful to identify lessons as well as weaknesses in addressing the specific challenges faced by coffee farmers. While the GCF (J. Sachs et al, Columbia University) was very ambitious and not yet implemented, a new generation of blended finance funds have managed to attract public and private sector resources. Often, the key factor is the complexity to deploy substantial and transformational funding to coffee. Many vehicles are limited in their scope, often to short-term debt, and lack the instruments to finance renovation. **Efforts by selected coffee roasters and traders have not been able to address the required systemic and transformational changes** due to often being limited to specific buyers and their suppliers.

One of the major learning points from interviews carried out with key coffee stakeholders is that access to finance is, on its own, insufficient to address the challenges which face sustainable coffee supply. Hands-on **technical assistance, an appropriately structured blended finance vehicle and participation by the industry are critical components**, which other initiatives currently lack or are still unable to fully accomplish their objectives.

By reviewing and drawing insights from existing funds, new proposals should build upon their successes and address the existing gaps to effectively support the coffee supply sector in coffee producing countries.

The below table presents a summary resulting from a quick review of a few of the funds available or planned:

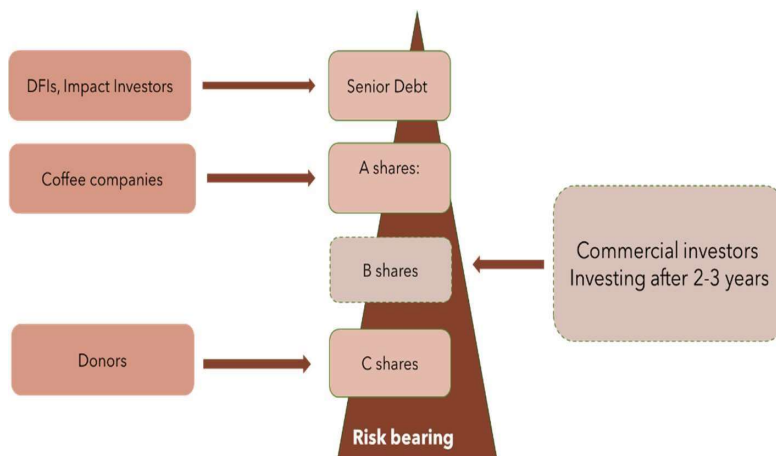
INITIATIVE	✓	✗
Farm Fit Fund (IDH)	Involvement of multinationals as investors and a pipeline generation, adaptable funding strategies	Limited focus on coffee, limited referrals by industry, difficult to get projects funded
ABC Fund (IFAD)	Global, well-designed blended finance structure, integration of technical assistance, funding through local banks	Public sector driven governance, limited focus on coffee
Aceli (CSAF)	Incentive mechanism to commercial lenders, innovation facility	Limited country coverage, limited focus on coffee, no direct investments
Coffee Resilience Fund (Root Capital)	Coffee focus, linkages with other initiatives notably TA	Focused on Latin America, direct lending only
Inspire (KCL)	Impact focused corporate structure attracting large PE, diversified	Caribbean focus, limited focus on coffee. Limited track record
Aroma Programme (new) (SCC/CI)	Evidence based grant, technical assistance. Linkage with ecosystem players	Limited country coverage, Limited to direct funding, Grant focus (phase 1) co-financing
Global Coffee Fund (n/a) (Columbia University for WCPF)	Focus on coffee, linkages with local/national sustainability plans	Governance public vs private, very ambitious.

IV.3 Value proposition for a coffee financial vehicle

To address the previously identified challenges, a new global IV for coffee is proposed. This initiative should be **built around the leadership of private actors and the shared responsibility of public and private actors**. It is complementary and capitalizes on learnings from other facilities and the demonstration of the value of collective action, while also leveraging and catalysing public and private resources, with a multiplier effect. It has a phased approach with unlimited potential for growth and a private sector-focused governance structure geared towards autonomy and attractive to investors. **The initiative leverages coffee companies for pipeline generation –as well as from producers and other stakeholders – as a de-risking and business alignment tool. A portfolio approach should be considered.** The IV conceived here differs from current activities and opportunities, especially with regard to blending and integration of all coffee public and private stakeholders and financial actors, and through a phased approach to be further discussed within ICO and CPPTF global context.

IV.4 Goals

The proposed investment vehicle has several key parameters, including **financing resilience to climate change, and broadening access to finance for rejuvenation and new plantations without deforestation, mitigating price volatility, improving productivity of coffee farms and viability of coffee farming.** The initiative has integrated components, including direct catalytic funding to cooperatives, farmer organizations, and MSMEs in underfinanced yet profitable segments of agricultural and agribusiness value chains. Preference is given to producers working in the value chain of coffee companies' investors in the fund.



Box – 10 Investment share structures

Share structures A, B, and C refer to different classes or types of shares within the vehicle company. Each class has distinct rights, privileges, and characteristics. While class C bears the maximum level of risk and will offer no or limited return to public sector investors, class A represents the common shares of the company and holds the minimum level of risk generating variable dividends depending on the company's profitability, Class B is an intermediate class which will be offered to investors whose main focus would be income and may not be interested in joining the vehicle's governance. The specific rights and features of each class will be outlined in the vehicle's bylaws and shareholder agreements.

Indirect funding shall be provided through financial intermediaries to further improve access to financial services for smallholders, cooperatives, and farmer organizations, as well as agribusiness MSMEs. The initiative also includes a technical assistance facility providing advisory services to cooperatives and farmer organizations, MSMEs, and financial intermediaries, who work with farmers. **The goal of the technical assistance facility would be to strengthen the capacity of such ecosystem players and de-risk the investment;** details will be determined based on existing schemes.

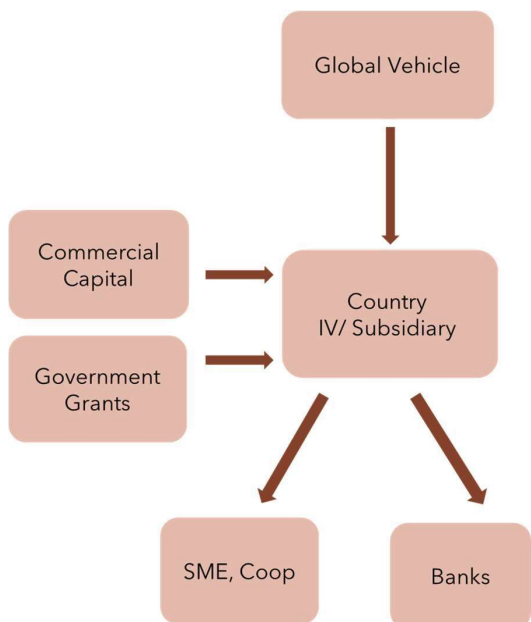
The analysis carried out did not specifically look into **carbon credit schemes** which may be considered when going deeper in the design of the financial architecture.

IV.5 A blended finance structure

The proposed investment vehicle is a **blended finance vehicle** that includes senior debt DFIs, impact investors, C shares, and A shares from coffee companies and donors. Commercial investors may also invest after two to three years, with B shares bearing the risk.

The investment structure is conceived as global, with possible IV country subsidiaries engaging local MSME, Coop banks, government grants and commercial capital. The IV is expected to deploy a variety of instruments throughout the value chain and attract commercial and institutional capital, with expected significant (double-digit) financial returns.

At country level, the vehicle is expected to capitalize on local investment vehicles / subsidiaries in countries of interest or countries expressing interest. It is also expected to be geared with domestically sourced commercial capital co- invested with public finance from those countries. This needs to be fine-tuned and adapted during Phase 1 depending on the selected countries.



Moreover, at country level, debt would be secured against local collateral and subsidized where possible with public funds (see the question of collaterals in chapter III).

Ultimately, it is proposed that the country subsidiaries invest directly in their farms, MSMEs and cooperatives and indirectly via local banks or other locally available financial mechanisms.

In the above structure, **public finance would therefore be used to catalyse commitments to the proposed IV from private players who are already active in the value chain but also crowd-in investments by other investors who typically see investments in coffee farmers as too risky.**

One of the key ingredients to the success of this vehicle would be the actual investment of coffee companies to demonstrate “their commitment and engagement” and, in doing so, mobilize additional investment from institutional and commercial sources.

How⁸ and what to invest in the IV needs to be further studied, looking at existing and innovative schemes through an engagement process within the CPPTF and also involving other private initiatives such as the GCP and SCC. Bilateral meetings and other engagement schemes such as a road shows and participation in global and regional events may also be useful.

IV.6 Options and road map

The proposed IV has several key advantages, including linkages with and tapping into country/sector/buyers’ programmes and other schemes with a high capacity to attract investors, including those suggested by ICO partners and referred to in this report. The road map for the initiative is based on **a phased approach to gradually expand and grow the Assets Under Management (AUM).**

⁸ As reported above, schemes for coffee industry to contribute to a global coffee funds have been suggested, such as share of profit, trade, etc. and different options need to be further explored.

Phase 1: Demonstration / development phase – initiate grant facility

A demonstration phase would be critical given the longer-term importance of bringing commercial capital commitments. Accordingly, Phase 1 is proposed, during which repayable grants would be used to analyse working capital needs, long-term investment requirements and the scale of operations for different beneficiaries at this level. Approximately up to \$50 million of **public and private finance** would be required for this phase, which would have a duration of one to three years.

Phase 1: Demonstration Phase

- Repayable grants to known suppliers in the G-CVC in order to quantify outcomes which constitute success.
- Target: Up to \$50 million of public money and coffee companies.
- Duration 1 – 3 years. Outcome: detailed investment strategy.

The **recipients of repayable⁹ grants** during the pilot phase are proposed to be coffee producers already connected to global value chains and ideally referred to the coffee companies sponsoring the grant facility, as well as from partner institutions (e.g. UNIDO, World Bank, IFAD, ITC or other development partners). Funding requests from such recipients would be **assessed by a dedicated investment team acting in full autonomy under clear criteria approved by partners¹⁰**. Engaging coffee companies in **pipeline identification** would also help maximize the likelihood of a successful pilot because such companies would refer producers with which they have a

longstanding relationship and stable demand for their products. Details of how to formulate the investment strategy proposal, and the eligible activities for which they would be provided, will be defined at a later stage.

The **measurement of outcomes during this phase is seen as a key component of the entire initiative in that outcomes must be quantified to define success/failure** and to iteratively refine the investment strategy of the future IV. Therefore, a detailed system to assess impact will be established.

At the same time, a second element of the demonstration phase is to **analyse the diversified investment needs and associated risk profiles of segments throughout the C-GVC**. The importance of this exercise is to define the appropriate allocation of public funds to other segments of the C-GVC, if any. For example, the capex requirements of a coffee grinder looking to expand capacity may not merit an allocation of public funds if such funding cannot be clearly demonstrated as **having clear additionality**.

This first phase could be piloted through a current private sector or public-private framework or platform such as the CPPTF, GCP or SCC. Moreover, the option to set up a **dedicated coffee foundation, under the auspices of the ICO, gathering several key players in the coffee industry should also be explored. The foundation, if set up, could become a shareholder of the fund, and continue to carry out non-repayable activities.**

⁹ Reference to repayable loans or grants https://ec.europa.eu/regional_policy/sources/guidance/guidance_repayable_assistance_en.pdf

Phase 2: Investment vehicle

Having delivered successful outcomes as defined during the demonstration/development phase, public money reflows from grant recipients and will be rolled into Phase 2. The fund established under Phase 2 may be a **five-year closed-end SME debt fund**.

The SME debt fund would be capitalized with the public money reflows from Phase 1¹⁰ and industry and DFI commitments of \$30 million resulting in total AUM of \$70 million.

Fundraising for Phase 2 would begin during Phase 1. The objective of the Phase 2 debt fund is to establish a successful track record and provide a platform for the launch of Phase 3.

Given the importance of a commitment from a coffee company or companies, applying guarantee schemes may also be considered. It is worth noting that guarantee funds tend to generate lower returns than conventionally structured debt funds so may not necessarily be the best vehicle to demonstrate proof of concept and catalyse follow-on investments. It is also assumed that coffee companies would not want to tie up capital in a guarantee fund, but rather maximize their return on investments (ROI).

It is proposed that this vehicle would have a two-pronged approach: **(i) direct lending to coffee cooperatives; and (ii) improving access to finance through credit enhancement for smallholders via local financial institutions**. This approach would not only address both the urgent needs of financing by farmers, but **also improve the financing ecosystem** by incentivizing local institutions to take a more prominent role in supplying additional financing, with the overarching goal of strengthening the weakest element of the coffee chain and promoting sustainable development within the sector. It is expected that this vehicle would be able to generate high single-digit net returns to investors. Again, a portfolio approach should be applied to determine the beneficiaries.

A single crop, single segment fund may have limited interest to commercial capital and even DFIs. Thus, an alternative could be to set up the vehicle as a Holding Company (“HoldCo”) as this structure may be better placed to realize the goals outlined earlier without the concerns associated with diversification of systematic risk which are commonly held by investors in funds. The negative impact of systematic risk would be felt more widely in such a single crop fund by a material downturn in the coffee industry than across a crop diversified portfolio that may also address unforeseen events and better safeguards investors interests.

Phase 2: Investment vehicle

- Holding Company or five-year closed end SME debt fund.
- Target: Initial capitalization \$30 million of industry & DFI commitments plus \$40 million of public finance including reflows from Phase 1 (assuming 20% loss of principal). Total up to \$70 million.
- Expected single digit net financial return.
- Important to demonstrate successful investment track record.
- Anchor investors, ideally an industrial coffee company foundation with DFI.

¹⁰ It is assumed that at least 80% of the principal during the development phase will be reimbursed. Hence, the contribution of public funds to Phase 2, assuming an initial commitment of \$50 million, will therefore be \$40 million

Phase 3: Listed HoldCo

This phase would see **diversification across the C-GVC and de-risking of the fund/HoldCo using lessons learned to redefine the investment strategy**. The objective of Phase 3 would be to **attract investment by commercial investors including larger PE Funds** which might have pension funds and other large institutions as LP investors in what could be structured as a follow-on fund or expanded HoldCo (with the option of rolling performing assets from Phase 2 into the Phase 3 vehicle).

Phase 3: Expansion

- Listed HoldCo or 10-year closed end fund investing variety of instruments throughout the value chain.
- Target first close \$150 million; final close \$300 million. Expected to attract commercial and institutional capital.
- Expected net financial returns exceeding 15%.

Option (A) – If the fund is structured as a global public-private partnerships initiative, then the next phase may be a 10-year closed-end fund investing in multiple segments of the value chain and thus have a lower risk profile. Investors are expected to be institutions and commercial capitals with a 15%+ net return expectation. Instruments in addition to debt would be possible. It is expected to have a first close at \$150 million with a goal of a final close of \$300 million. At this stage, stakeholders may prefer that no more public money would be required, as **the vehicle would have a sufficient track record and profitability to produce a return and attract purely commercial investors.** Any remaining

public money, if not required, could then be returned to donors for use in other programmes or projects or pooled into the technical assistance facility.

Option (B) – Alternatively, **if the vehicle were set up as a Holding Company, the anchor investor(s) would receive A Shares in the HoldCo** (A Shares usually hold superior voting rights as compared with shares subsequently issued). The anchor investor(s) would have the option to offer terms to co-investors committing share capital at incorporation or subsequently. DFIs would inevitably require terms irrespective of the timing of their investment. Holders of A Shares may decide to maintain an extended window for the subscription of A Shares to increase the attractiveness of investment in HoldCo and crowd in capital from other commercial investors.

Again, **the target to be raised would be \$150 million** and, under this scenario, donors may choose to continue their involvement by maintaining C Shares in HoldCo should they so wish. C Shares would carry limited or no voting rights, and it is assumed that donors would only pursue this option if they viewed their participation in the Phase 3 HoldCo as additional¹¹.

While these considerations may be premature, the Board of Directors, comprised of A Shareholders and constituted following incorporation, may choose to create a class of B Shares for follow-on investors which carry fewer voting rights. This decision would probably depend on the operating results of HoldCo during the investment period during which A Share Capital (and any C Share capital being that issued to investors of public money) were invested. In a similar way to Phase 3 of the fund strategy, the objective of Phase 3 of HoldCo would be to achieve a market cap of \$300 million and deliver similar returns to shareholders. **This structure should be of interest to impact investment funds looking for investee companies**¹².

¹¹ An alternative available would be for public money investors to sell their C Shares which would subsequently be converted to A Shares, hence eliminating the C Share class and returning the money to donors.

¹² For example, to the recent commitment by Portland Private Equity, a fund with several hundred million dollars of AUM, to the Inspire 2X initiative in the Caribbean.

The model does not necessarily include interventions in *equity* (for consolidation of micro-growers; climate-resistant plants; water management systems; etc.) as they are usually very complex and as the IV does not deal with innovative start-ups. **The idea of a mix of grant, equity and debt shall be considered at a later stage.**

Over time it is expected that the entity would **attract further capital on the back of demonstrated positive performance**, and that it would target an eventual market capitalization of up to \$500million or more.

PART V. CONCLUSIONS AND THE WAY FORWARD

The coffee sector is at a crossroads. **While prospects for continuous and sustained demand are very promising, it is also facing unprecedented threats**, notably from climate change and various levels of vulnerability in terms of price volatility, increased production, trade costs, the changing regulatory framework, an ageing population while simultaneously becoming less attractive for younger generations, access to finance and know-how, and concentration of producers and industry. The specific challenges of the coffee sector call for a **well-coordinated, coherent and systematic solution, of which this financing vehicle could be a cornerstone.**

While producing countries and farmer requirements should be a starting point for building any new investment solution, the **coffee industry's financial participation and a few "cornerstone commitments" in an innovative investment mechanism would be critical for such vehicle** to see the light and be able to provide a response to the multiple challenges faced by the sector.

It is proposed that the ICO, with its partners and in connection with other initiatives, **initiate the preparation of Phase 1 and gather the initial critical mass of early support by selected donors and coffee companies.** The following steps are being considered:

- 1) **Present this Report, along with the associated options for complementary access to finance and an investment vehicle, to the CPPTF and ICC and further engage with interested parties;**
- 2) **Secure consensus from the CPPTF and the ICC on this document and on next steps and plan;**
- 3) **Mobilize all actors in the C-GVC – in a pre-competitive manner – to work together to mobilize, manage, and deploy additional financial resources to the coffee sector, through blended finance with bilateral and multilateral donors and financial institutions;**
- 4) **Define a detailed concept for Phase 1, including a proposed governance, institutional set up and investment strategy including:**
 - (a) **Integrating the investment vehicle with the other options including those presented in this report;**
 - (b) **Assessing the opportunity to foster access, expand and improve existing funding mechanisms vs setting up new schemes/vehicles and options for fund mobilization for the coffee sector; and**
 - (c) **Building a pre-competitive mechanism (existing or new platforms including the creation of a Coffee Foundation) to mobilize resources from the coffee industry, countries, donors, impact investors and other public and private funding institutions;**
- 5) **Engage an initial critical mass of donors and coffee companies to elicit the first pledges, through a dedicated engagement strategy (B2B meetings, roadshow, engagement groups, etc.) for (blended) financing the phase 1 (demonstration) of the IV including identification and agreement of mechanisms for mobilizing private sector contributions;**
- 6) **Initiate engagement with DFIs and selected impact investor to prepare the ground for Phase 2;**
- 7) **Launch the Phase 1 in 2024/25: build a TA facility, funds mobilized, pipeline identified and assessed and implementation;**
- 8) **Start Phase 2 between 2026 and 2028, based on the success of Phase 1.**
- 9) **Set up a system for collection of farm data to better assess investment needs and for assessing/evaluating the effectiveness of the sustainability project in the coffee sector, built around the ICO GKH and open to partnership with academia and other stakeholders and platforms.**

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ANNEX I – OTHER FINANCIAL SCHEMES FOR THE COFFEE SECTOR

Annex I1. UNIDO partnership model for de-risking investments in the Ethiopian coffee sector



UNITED NATIONS
INDUSTRIAL DEVELOPMENT ORGANIZATION



Facilitate access to impact financing in the Ethiopian coffee sector:

Funded by the Italian Agency for Development Cooperation (AICS), the “UNIDO partnership model for de-risking investments in the Ethiopian coffee sector” aims to support the coffee value chain in Ethiopia, which contributes over 25% of the country’s export earnings and supports the livelihoods of more than 5 million smallholder farmers.

Developed in close collaboration with public and private partners, the project goal is to **facilitate access to finance by establishing a dedicated credit line, the first Ethiopian Coffee Fund, to provide concessional loans and technical assistance to investment proposals with a high socio-economic and environmental impact.**

The project will minimize investment risk by establishing a responsive framework in cooperation with public and private counterparts to enable the development of private sector initiatives operating in the Ethiopian coffee value chain. It focuses on the coordination of three intervention modalities:

Technical assistance

The project is supporting the Commercial Bank of Ethiopia (CBE) to efficiently invest the soft loan in bankable, sustainable and impactful business opportunities in the Ethiopian coffee sector. The funding proposals will be presented by private enterprises, local cooperatives and unions within launched calls for proposals.

The project has developed a dedicated impact assessment tool for ranking the proposals based on their impact, investment risk and bankability. Moreover, a self-assessment tool and training opportunities will be available for the applicants, with the aim of raising awareness on sustainability among the local community, improving businesses’ capacities to adhere to sustainable principles and ensuring value while reducing their environmental footprint. The project is also developing a reporting system for evaluating the impact of the coffee credit line investment strategy in line with the OECD-UNDP Impact Standards for Financing Sustainable Development to ensure a positive impact on sustainable development, and transparency of the development results.

Another component of the technical assistance will be aimed at supporting the Ethiopian Coffee and Tea Authority in sustainably managing the [Ethiopian Coffee Training Center](#), improving its institutional capacity to provide services to public and private stakeholders operating within the coffee value chain.

Credit line establishment

Since environmental and social sustainability, combined with economic viability, are fundamental to the achievement of the development goals outlined in the 2030 Agenda, and since the corporate sector is critical to delivering global climate change mitigation goals, the aim of the credit line facility is to introduce a high-impact investment mechanism, which will provide funding in the form of loans to Ethiopian growth-oriented companies operating in the coffee value chain for environmentally and socially sustainable projects.

The goal of the credit line facility is to improve the business of the Ethiopian companies operating in the coffee sector, vertically integrate the branches of the coffee value chain, introduce improved agronomic and processing

practices to increase quality and quantity of exported coffee, facilitate climate change adaptation of the coffee sector and, in general, bring a positive impact to the coffee value chain.

The selected businesses will have access to credit at preferential conditions.

The credit line, financed through a 10 million EUR concessional loan provided by the Italian Government to the Government of Ethiopia, will be managed by the Commercial Bank of Ethiopia (CBE).

Risk sharing business partnerships

The initiative will seek the active engagement of the international private sector in supporting local private stakeholders' investments through improvement of bankability, increased attention to environmental and socio-economic aspects and technical assistance for ensuring sustainable supply/value chain development. This engagement may take different forms, such as guarantees, joint ventures, offtake agreements, with a focus on origin, biodiversity, social responsibility, price incentives, knowledge transfer etc. The international private sector, including roasters and traders, will play a competitive role in de-risking and improving the quality and sustainability of the supported proposals.



Credit Line Facility

- Facilitating access to finance, through the establishment of a specific Credit Line Facility dedicated to funding investment proposals selected for their **high environmental** and **social** impact on the **coffee sector**.

IMPACT AREAS



- The **Credit Line Facility** is financed through a **€10 million concessional loan** provided by the Italian government to the Government of Ethiopia and will be managed by the Commercial Bank of Ethiopia (CBE).
- Type of funding: **loans** to Ethiopian companies operating in the coffee value chain.
- The selection of the investment proposals with environmental and social impact will be facilitated by **Impact Assessment Tool** developed for the project.

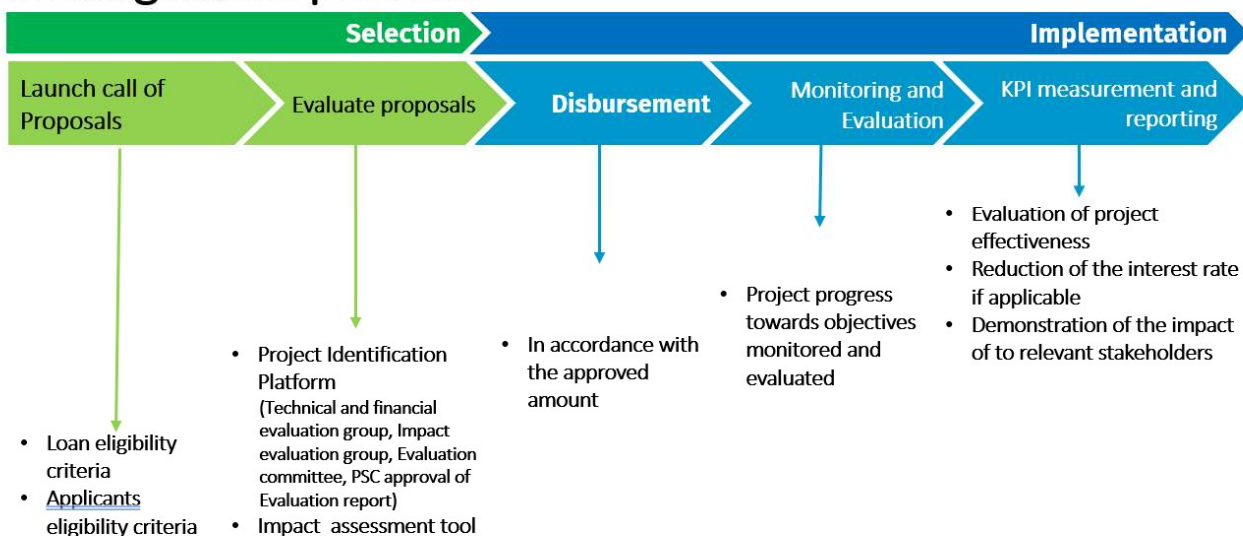
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Unique mandate reflected in SDG 9.3:

Increase the access of small-scale industrial and other enterprises, in particular in developing countries, to financial services, including affordable credit, and their integration into value chains and markets

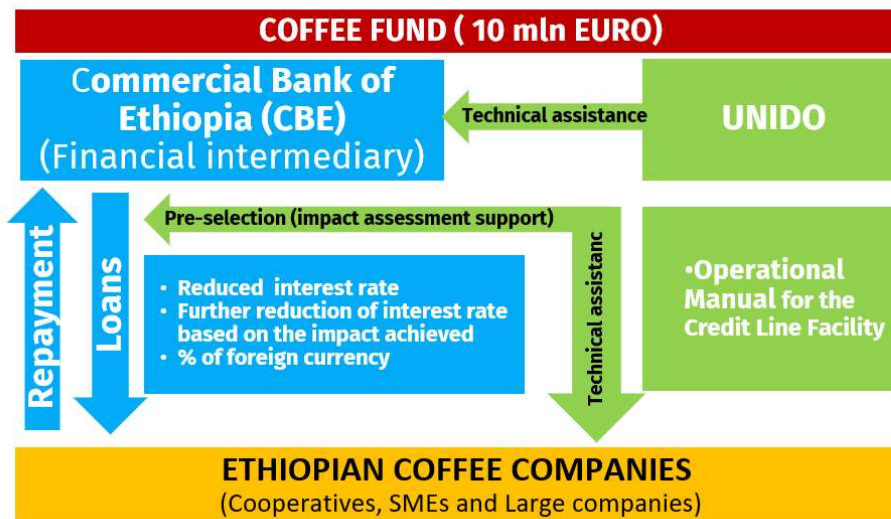


Management process





Project business model



Specific terms of the Loans

- The loan will be in the form of (a) **project loan** (investments in tangible assets) and (b) **working capital loan, if needed**. The working capital loan has to be related to development of the activities referred to in the project loan.
- **Minimum amount of the loan to final recipients**
100 000 EUR
- **Maximum amount of the loan to final recipients**
1 000 000 EUR
- **Currency of the loan**
BIRR or BIRR and EUR in compliance with the CBE internal rules and procedures.
- **Interest rate** - TBD



Selection process

CALL OF PROPOSALS



Environmental and Social Impact areas

Environmental

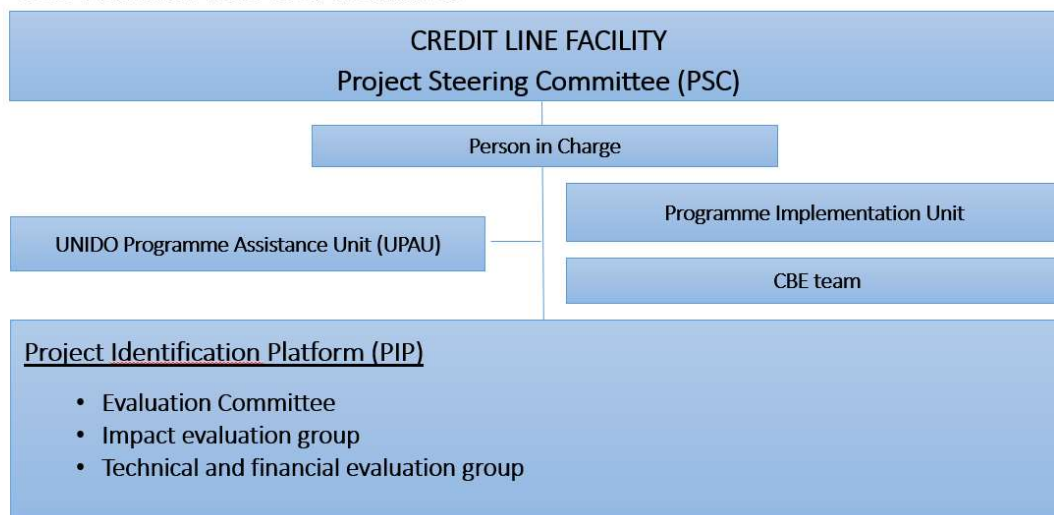
- Climate change and air pollution
- Sustainable use and protection of water
- Circular economy
- Biodiversity

Social

- Active support to employment and improvement of terms and conditions of employment and career development, trainings
- Promotion of employee safety measures and reduce frequency of injuries.
- Promotion of farmers' co-operative system
- Gender equality
- Improvement of living conditions of local communities



Governance structure



Annex I.2 International Trade Centre (ITC) approach to leverage : Opportunities to support the coffee GVC with impact investment and financing.¹³

Agribusinesses in coffee must improve their access to the supply side of the financial market to generate the investments that fund innovation, value addition, and strategies geared towards sustainability and resilience.

Because of the nature of MSMEs and the specificities of the coffee value chain, this will not happen without holistic support that connects sources of financing from which MSMEs and family farmers are traditionally excluded. It requires enabling a more inclusive, diversified, and impactful financial toolbox. It also requires support for upgrading, more responsible business models, and facilitating partnerships geared towards development.

We see four leverage points for improving the connection between supply and demand:

1. **Identify and curate investment pipeline:** Coffee companies and producers can act as climate conduits, employing climate-specific instruments and directly impacting farmers and MSMEs through their organizations.
2. **Matchmaking with existing blended instruments with a specific impact focus:** Instruments that integrate first-loss capital and incentive models, robust classification systems, and regular reporting can be game-changers.
3. **Financial inclusion and capacity building:** A cornerstone for growth in developing and emerging economies but applicable to supply and demand.
 - (a) Strengthening the capabilities of agri-MSMEs and coffee stakeholders to understand better and manage financial requirements and supporting the development of value-added products and risk diversification to increase “investability” and bankability.
 - (b) Strengthening the capabilities of Development Financial Institutions (DFIs) to address unmet agri-MSMEs’ needs and supporting the development of more innovative targeted financial products and schemes that **involve the coffee value chain and include climate finance, zero carbon, and green investment.**
4. **De-risking investments through tailored technical assistance (TA) and market and business development services (BDS):** This involves a nuanced segmentation of MSME clients, exporters, and farmer cooperatives. It also involves region-specific delivery models and fosters local and export market development. Capacity building and TA provided to both supply (Fis and Impact investors – to address pain points, adapt and improve tailor-made products) and Demand (MSMEs, family farmers, and value chain operators to address pain points and strengthen bankability).

Provisional MSME guidelines for segmentation have been drafted.

¹³ This annex has been written by staff and consultants of the International Trade Centre and it showcases original content, Intellectual Property and methodologies developed by ITC in the context of its work in Inclusive Agribusiness. Some of the content included has been developed in collaboration with the Small and Medium Enterprise Finance and Investment Network (SAFIN) hosted by IFAD. This work is a product of the staff of the International Coffee Organization (ICO) with external contributions. The findings, interpretations and conclusions expressed in this work do not necessarily reflect the views of the ITC. ITC does not take responsibility for the content nor views expressed in any form. The ITC does not guarantee the accuracy of the data included in this work.

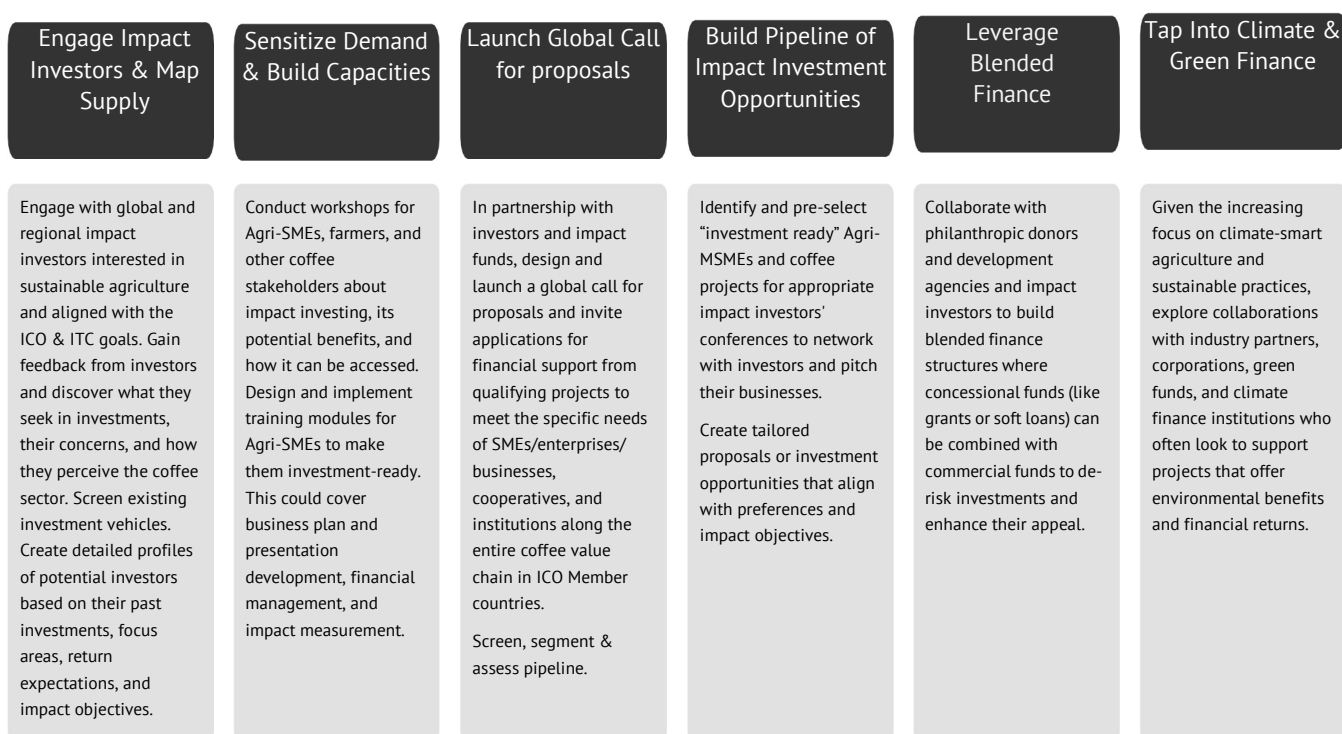
Proposed priorities for consideration in the approach

We are proposing a comprehensive **three-phased approach** to significantly enhance involvement in the impact finance and investment sector to achieve broader sector social, economic, and environmental impact.

1. Initiating proactive engagement with the impact-investing community and the coffee value chain.

The immediate focus is on laying a robust foundation by initiating proactive and deep engagement with the impact-investing community. By engaging with the finance and impact investment world, ITC and ICO will be able to understand potential partners and position their partnership as a transparent, impactful, and valuable collaboration.

This phase emphasizes mapping the impact of investment funds, partners, and awareness raising on the needs of the coffee industry, as well as relationship building, education, capacity building, networking, and due diligence support.

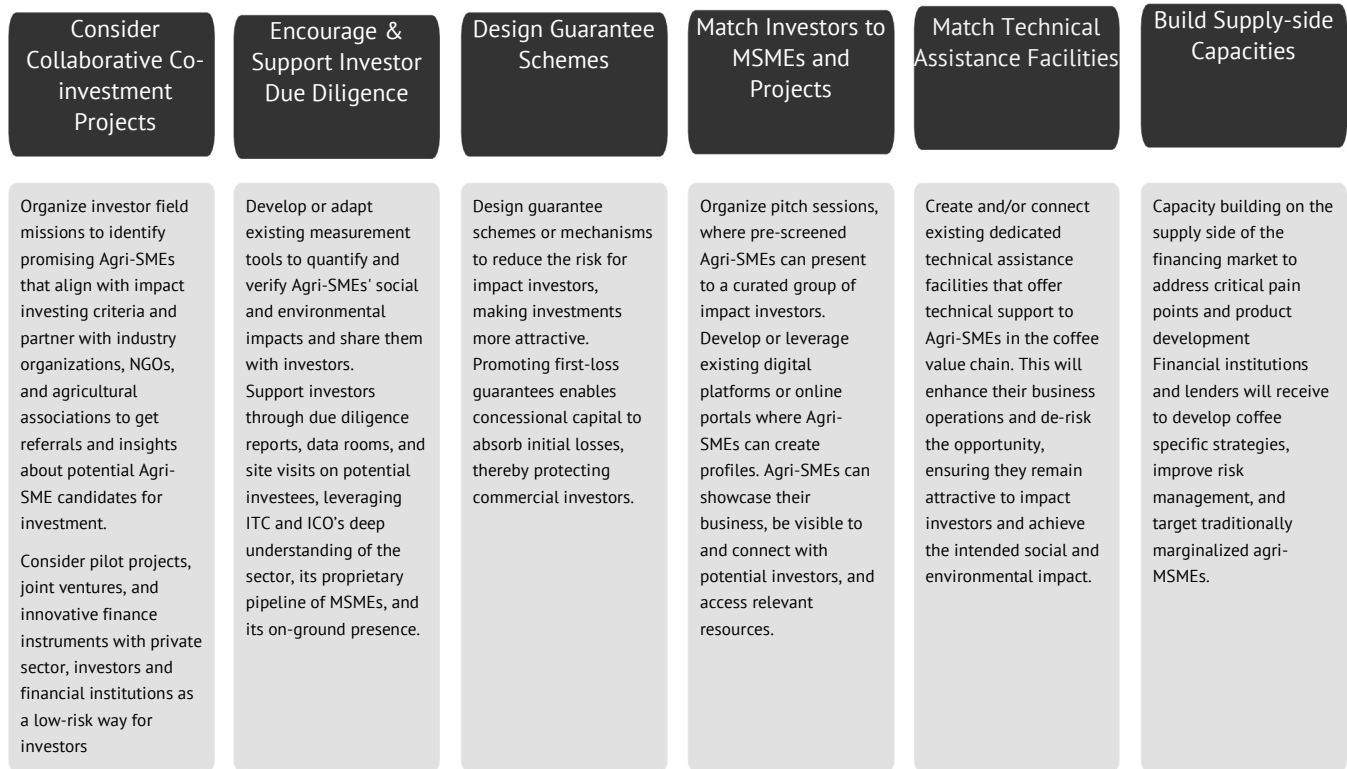


This phase would also include identifying investment needs, demand, and opportunities through a global call for applications targeting coffee value chain operators, institutions, and ICO Member states. Eligible projects may be related to production, processing, financing, marketing, and research and development (R&D). They will prioritize innovative partnerships, co-creation, and co-investment for sustainable solutions. They shall include activities in ICO Member countries, contribute to the SDGs, and demonstrate clear and visible potential to achieve inclusive, scalable, and positive social, economic, and environmental impact on coffee-producing communities' livelihoods and MSMEs.

2. Fostering deeper trust, pipeline development, capacity building, and showcasing tangible matchmaking.

Advancing to the medium term, the goal shifts to fostering deeper trust, capacity building, and matchmaking between supply and demand. Robust pipeline development and strategic collaborations enhance the potential for demonstrating tangible impact and leveraging further investments. Capacity building, targeted due diligence, and matchmaking of TA contribute to de-risking and ensuring that the agri-SMEs and VC operators are better equipped

to utilize those funds effectively.



Capacity-building activities will leverage existing TA programmes, national institutions, and value chain operators' capabilities. Additional TA facilities should be developed, leveraging ICO, ITC, and CPPTF/network partners' activities and programmatic interventions. Global resources such as the Coffee Guide, the Center for Circular Economy in Coffee, and ICO CPPTF member-associated capacity-building tools and outreach will be critical to supporting value chain operators and MSMEs. ICO and ITC will also seek to expand fundraising partnerships for targeted TA when not already available.

3. Broadening toward sustainable, innovative collaborations, the formation of new ventures, and more extensive ecosystem engagement.

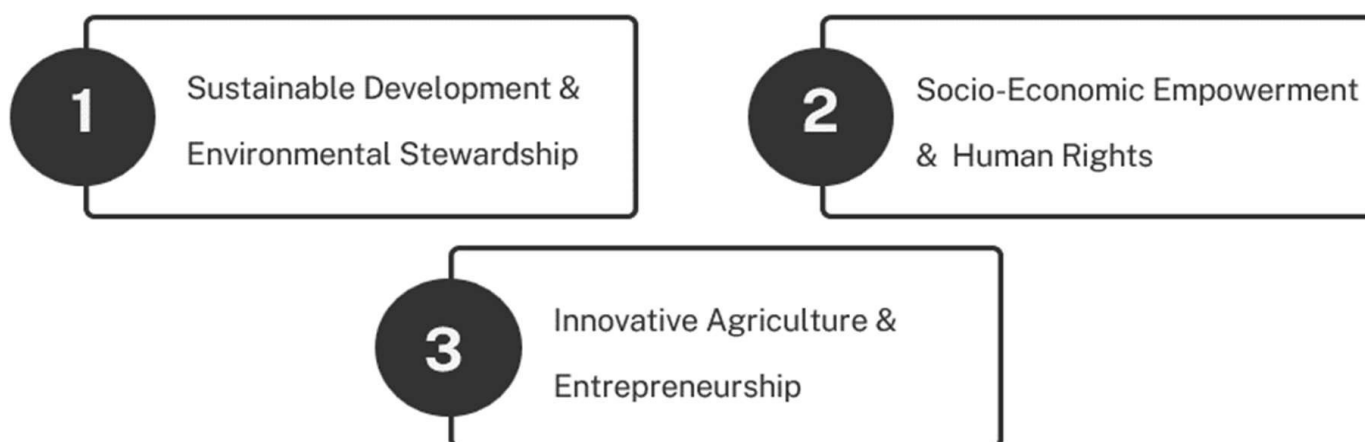
The long-term vision broadens toward sustainable, innovative collaborations, the formation of new ventures, and more extensive ecosystem engagement leveraging on ICO CPPTF members, coffee industry corporations and value chain operators, ICO Members and ITC corporate partners, and trade, development, and investment constituency.



This holistic, phased approach will significantly advance ICO and ITC objectives to support inclusive and innovative financial and investment mechanisms for Agri-SMEs and smallholder farmers in the coffee value chain. This phase will also include research, case studies, and specific engagement of policymakers to ensure scalability and more transformative impact. Special attention will be given to documenting lessons learned, fostering deeper stakeholder engagement, showcasing the impact, attracting further partnerships and investments, and building sustainable collaborations.

Focus on three impact baskets

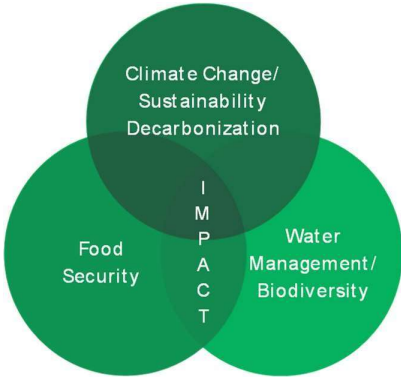
Following consultations with stakeholders in the agribusiness sector the option would be to focus the investment mobilization and matchmaking strategy on three impact 'baskets' to address different aspects of sustainable development and investment to increase sector impact.



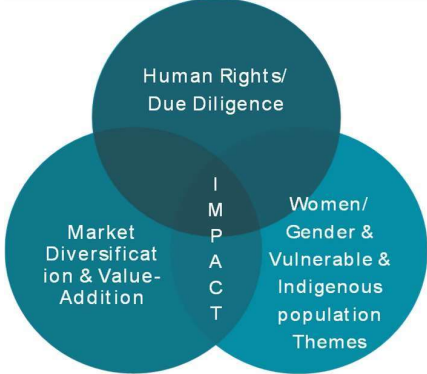
Broad baskets encompass a range of issues but have enough focus to appeal to the interests of specific donors, corporations, and capital sources. This comprehensive approach to development covers environmental, social, and economic dimensions to make fundraising efforts more targeted and effective.

Rather than supporting the development of a single impact or blended investment fund vehicle, **ITC and ICO** will focus their extensive resources, vast network, and continued efforts **to develop pipeline opportunities, fundraise for select projects or pilots, and act as a valued “matchmaker” structuring the call for proposals around these three impact baskets.**


1. Sustainable development and environmental stewardship:

	<p>This basket emphasizes holistic environmental management, including climate action, biodiversity conservation, and sustainable agriculture. It also includes the finance and investment needed to comply with environmental, social and governance (ESG) increased regulation, particularly associated with market access and compliance.</p> <p>This comprehensive approach can attract donors/capital sources interested in environmental issues, from climate change to food systems.</p>
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2. Socio-economic empowerment and human rights:

	<p>This focuses on empowering communities economically while foregrounding human rights, child labour, living income, and gender equality. It also includes the finance and investment needed to comply with ESG regulations, particularly those associated with market access and compliance.</p> <p>It could appeal to donors/capital sources interested in social issues, gender equality, and economic development.</p>
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3. Innovative agriculture and entrepreneurship:

 <p>Next-generation agriculture entrepreneurs & Agritech</p>	<p>Dedicated to supporting innovation in agriculture, aiding new entrepreneurs, targeting youth, developing sustainable research and development, and supporting the ecosystem. It also includes the finance and investment needed to comply with ESG increased regulation particularly associated with market access and compliance.</p> <p>This standalone theme attracts donors/capital sources, HNWI, and family offices interested in innovation, entrepreneurship, youth, digitalization, R&D, and the future of agriculture</p>
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Each impact basket is designed to attract specific donor, corporate, and capital sources interested in these thematic areas. Aligning a product with the right investor/capital provider fit is crucial for several reasons:

- (a) **Resource efficiency and availability:** It ensures that the product receives the resources and expertise the specific investor can offer.
- (b) **Value alignment:** Compatibility in values and vision between the product and the investor leads to smoother collaboration and understanding.
- (c) **Targeted expertise:** Different investors bring unique industry insights and network connections, which can be pivotal for the product's growth in its specific market.
- (d) **Long-term success:** A well-aligned investor relationship contributes to sustainable, long-term success, as both parties are committed to the same goals.

This basket alignment and 'packaging' are critical to ensure a more strategic focus to secure funds, build sustainable partnerships, and add value beyond financial success.

Primary target groups for support include:

Cooperatives: These are farmer-owned and operated entities that often need more financial leverage and business acumen to access traditional finance and investment. By supporting cooperatives, the collaboration aims to strengthen their financial management capabilities, improve their market access, and enhance their sustainability practices. This support can increase income for smallholder farmers in these cooperatives.

Smallholder farmers: These individuals represent a significant portion of the coffee production landscape but are frequently marginalized regarding access to finance. The initiative aims to provide them with the financial tools and resources necessary to invest in their farms, adopt sustainable practices, and improve their livelihoods. **This may include access to microfinance, crop insurance, and direct investment in farm improvements.**

Processors, including roasters, are generally small and medium-sized companies playing a crucial role in the coffee value chain. By adding value, transforming raw coffee beans into export-ready or roast-ready products, they facilitate the connection between producers and consumers. Efforts to assist processors in adopting sustainable processing practices, minimizing waste, and enhancing efficiency are essential and the collaboration aims to facilitate access to finance that enables these processors to grow, innovate, and contribute to a more sustainable coffee sector.

However, processors often struggle to secure financing for essential equipment and technology needed to scale their operations or sustainably source beans. Supporting them with investment could lead to a more sustainable value chain, improved quality of coffee, and stronger relationships with farmers. Further, it could help their capacity to offer fair prices to smallholder farmers, contributing to the overall resilience of the coffee sector.

Wholesalers: Wholesalers act as essential intermediaries in the coffee supply chain, but small to medium entities within this group can face challenges in scaling their operations or investing in sustainable supply chains. Support for these entities would focus on enhancing their financial literacy, access to credit, and ability to invest in sustainable practices.

MSMEs: Beyond the farm gate, numerous MSMEs contribute to the coffee value chain, including those involved in processing, packaging, and distribution. These enterprises are pivotal for the sector's growth and sustainability but often lack the collateral or track record to attract traditional financing. The initiative would aim to bridge this gap through tailored financial products, technical assistance, and capacity building.

By focusing on these target groups, the ITC/ICO collaboration intends to foster a more inclusive financial ecosystem that supports the growth and sustainability of the coffee sector. The approach is to provide access to finance and the necessary support to ensure these entities can effectively utilize the funds to improve their operations, adopt sustainable practices, and enhance their contribution to the coffee value chain. This targeted support is expected to catalyse broader economic development and sustainability in coffee-producing regions, ultimately benefiting a wide range of stakeholders within the sector.

Additional targets for consideration include:

Expanding the focus of the ITC/ICO collaboration to include additional stakeholders could further enhance the impact and reach of initiatives aimed at promoting inclusive and innovative finance and investment in the coffee sector. Each of these additional groups plays a crucial role in the ecosystem, and their involvement could provide comprehensive support to the target MSMEs and other entities within the coffee value chain. Below we outline how these groups could be integrated and why their inclusion could be beneficial:

Financial institutions could be engaged to design and offer financial products tailored to the needs of the coffee sector, including loans, credit facilities, and insurance products specifically for smallholders, cooperatives, and MSMEs. Their inclusion would bridge the gap between traditional finance and the specific needs of the coffee sector, providing more accessible, affordable, and appropriate financial services that support sustainable practices and business growth.

Exporters play a crucial role in connecting producers with global markets. The collaboration could focus on supporting exporters in building sustainable supply chains, ensuring traceability, and promoting adopting fair-trade practices. By assisting exporters, the initiative could ensure that coffee farmers receive better market access and fairer product prices, enhancing their livelihoods and the sustainability of coffee production.

Research institutions: Collaborating with research institutions to conduct studies on sustainable farming practices, climate change adaptation, market trends, and financial innovation could provide valuable insights for the coffee sector. Partnerships could lead to the development of new technologies and practices that improve productivity, sustainability, and resilience in the coffee sector. This research could also inform better financial products and investment strategies targeted at the specific needs of the coffee value chain.

Incorporating these additional groups into the collaboration efforts could create a more holistic and integrated approach to addressing the challenges within the coffee sector. Financial institutions could provide the necessary

capital and economic innovation, processors and exporters could ensure sustainability and efficiency in the value chain, and research institutions could offer the insights and innovations needed to drive the sector forward. This comprehensive approach could significantly enhance the impact of the ITC/ICO collaboration, promoting a more sustainable, resilient, and inclusive coffee sector.

Annex I.3 Programme - Alternative Response Options for Mitigation & Adaptation of Coffee Farms (AROMA)

The AROMA Program, promoted by the Conservation International Foundation and funded by the Green Climate Fund (GCF) aims to significantly impact climate resilience and sustainability within the coffee sector. The GCF has approved in 2023 Preparatory Assistance funds.

The GCF Program will increase the climate resilience of coffee communities in **Colombia, Mexico, Uganda, and Viet Nam** (with future expansion in additional countries envisioned), while reducing maladaptive geographic expansion of coffee production, resulting in lifetime greenhouse gas (GHG) emissions reductions, emphasizing a paradigm shift towards more sustainable and climate-resilient practices in coffee farming. It will engage the private sector, including large coffee companies, and governments to increase scale of impacts and ensure the sustainability of the project in part by creating a “Nature Positive Facility” to support the long-term growth of small coffee enterprises and facilitate large companies’ investments, thereby ensuring that coffee production is climate-resilient and climate-smart beyond the life of the GCF investment. With an **estimated total budget of \$154.2 million, including \$117.9 million sought from the Green Climate Fund (GCF), the Program underscores a commitment to long-term environmental resilience over its 25-year lifespan. Additionally, it aims to attract \$45m from private-sector investment to further its goals.**

AROMA will focus on smallholder farmer climate vulnerabilities and ensuring that smallholders can continue to produce coffee and sustain their livelihoods under increased temperatures without significant geographic expansion by employing sustainable production methods. It will scale interventions that have been proven effective at smaller scales as well as deploy innovative new ideas. GCF investment is sought for this globally important commodity because the private sector is not currently incentivized to work directly with the most vulnerable smallholder farmers or engage with governments to create the enabling conditions for climate responsive coffee production.

It will address the needs of the most vulnerable in the coffee supply chain, the smallholder farmers who produce our coffee, while also showing a path forward and creating models across important coffee producing geographies for further adoption by producers, additional countries, and the private sector. The AROMA Program targets areas of intervention aiming to:

- **Enhance resilience and reduce vulnerability for at least 1,000,000 individuals while reducing emissions by approximately 5 MtCO_{2e} emission.** This dual focus on human and environmental health underpins the project’s holistic approach to climate adaptation.
- **Improve and build resilience in land management practices in over 300,000ha of coffee farms and surrounding ecosystems, aiming to increase productivity on at least 10% of coffee areas.**
- Mitigate the risk of expansion of coffee’s carbon footprint by **avoiding the conversion of forest and coffee areas on 1,000,000 hectares, improving on-farm practices on 160,000ha, and restoring land on 40,000ha.**

The AROMA program’s main activities are structured around the following components:

- (1) **Climate-Resilient Governance:** strengthening climate-resilient and low-emissions landscape planning and governance.
- (2) **Promotion of Responsible Farming:** Promoting practices that improve responsible land management and support adaptation at the farm and landscape level.
- (3) **Financial and Sectorial Support:** Increasing financial and private sector support for climate change considerations into sustainable production in coffee landscapes.

The Programme is aligned with various Sustainable Development Goals (SDGs), envisioning a coffee sector that not only survives but thrives amid the challenges of climate change. By improving the adaptive capacities of smallholder farmers and ensuring the inclusion of vulnerable groups such as women, youth, and the elderly, the Programme aims to make a significant impact on the communities it serves. The engagement with the private sector is particularly notable, as it seeks not only financial support but a broader commitment to sustainable coffee production and ecosystem management.

ANNEX II - INVESTING IN THE NEXT-GEN: ENSURING LIVELIHOODS IN THE COFFEE SECTOR

The Covid-19 pandemic put a spotlight on how the world's supply chains are managed, how robust they are, and where they are vulnerable. This was a key concern for those in economics, business, and government. The coffee industry, for example, managed to adapt well to these challenges. **However, younger workers in this sector, from those growing the beans to those serving the coffee, faced serious job and financial problems.** These issues were made worse by several factors: (i) a growing gap between the old and the young in the industry; (ii) an increase in the number of older coffee farmers; (iii) unfair distribution of land and resources; (iv) people leaving rural coffee-growing areas; and (v) the division of coffee land due to it being passed down through families.

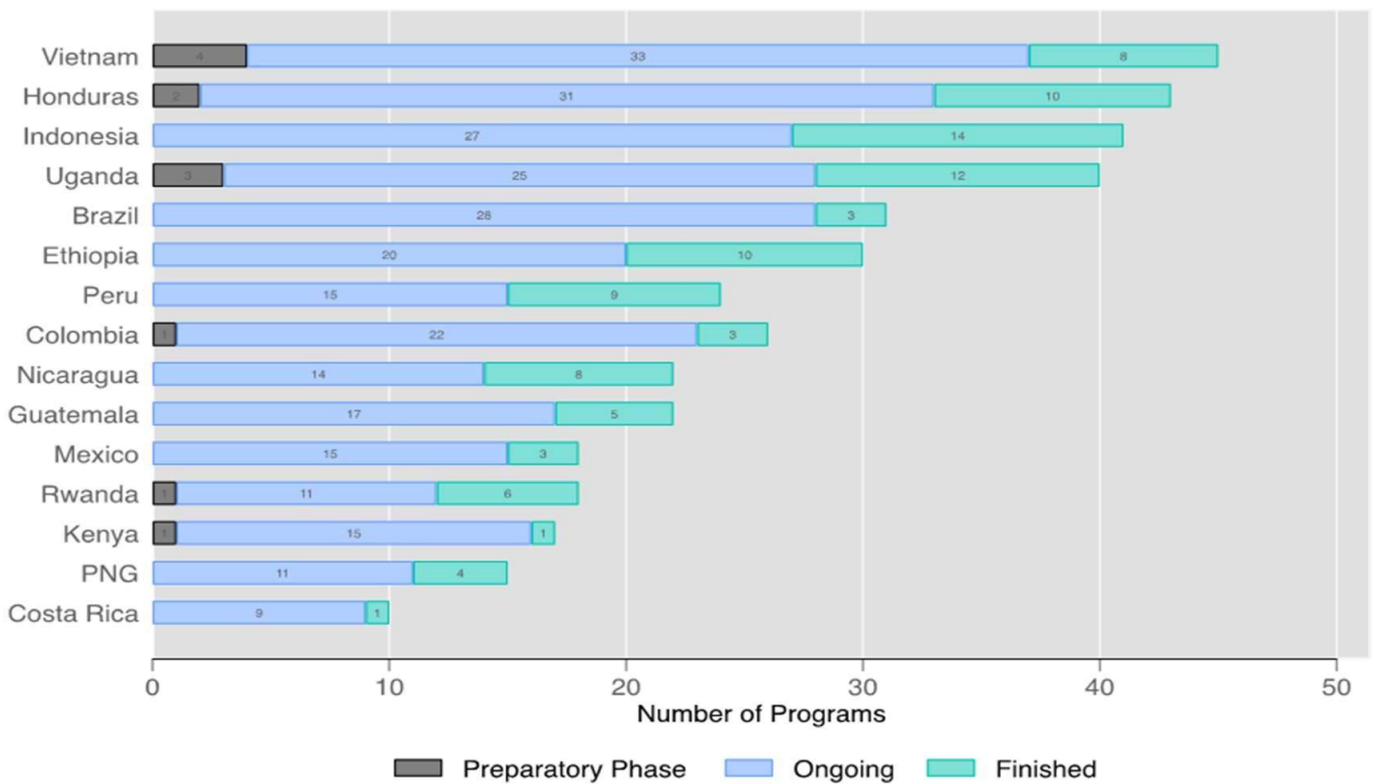
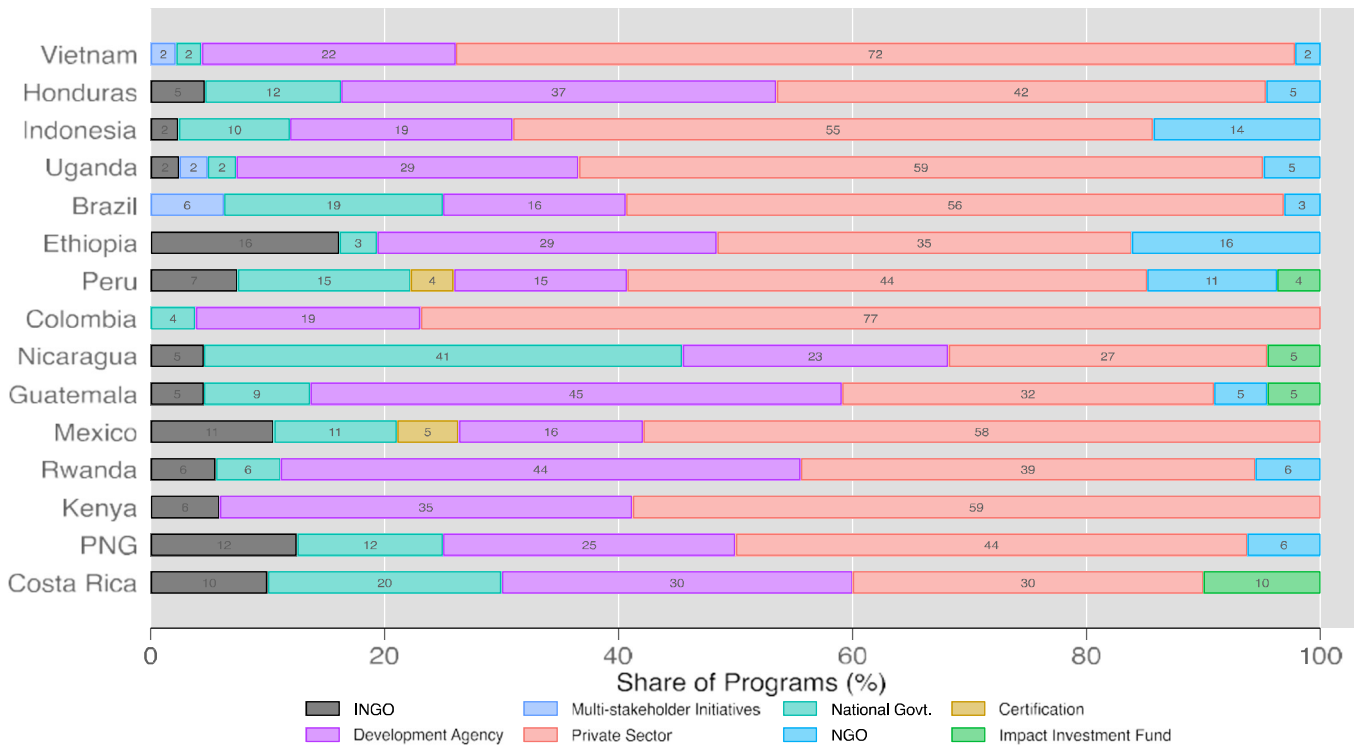
Young adults are more prone to underemployment and precarious job situations compared to older adults. In coffee producing countries (CPCs) within the Global South, agriculture traditionally offers the bulk of job opportunities for youth. However, there is a growing trend of young people moving towards service sector roles, particularly in commerce and distribution. This shift is leading fewer young people to take part in coffee farming. Many lose interest in agriculture, while others face hurdles such as scarce resources, insufficient skills, and various cultural or economic limitations. These include challenges with land ownership, outdated decision-making practices, and limited access to formal financial services.

Recognizing these challenges, the ICO dedicated the 2021/22 coffee year to “youth in coffee”. Its initiatives encompassed a review of current trends, pinpointing effective strategies, offering policy guidance, and championing a stronger involvement of young people in the coffee industry's global supply chain.

To emphasize the role of the next generation in the coffee industry, the ICO drove forward two major initiatives: (i) a “Coffee and Youth” day, in partnership with GIZ; and (ii) the launch of the “2021 Coffee Development Report (CDR2021)” entitled “The Future of Coffee: Investing in the Next Generation for a Resilient and Sustainable Coffee Sector”. This report, enhanced with contributions from researchers at Michigan State University (MSU) and based on extensive surveys, showcased more than 100 exemplary methods for involving young people in the coffee sector.

Home to 4.9 billion people, in coffee-producing countries those aged between 15 and 34 make up roughly one-third of the population. This highlights a crucial interdependence: the future of coffee is tied to the youth, and vice versa. As the saying goes, “Youth need coffee, and coffee needs youth”, so it's imperative that we pass the baton – or indeed the coffee cup – to the younger generation. They are the answer to producing and consuming responsible and sustainable coffee. And the future has already begun. Access to finance becomes a critical factor for the new generation of coffee farmers and coffee operator in the C-GVC.

ANNEX III – ICO/ITC/EU COFFEE SUSTAINABILITY PROJECTS MAPPING DATABASE



Country	Cost of Upgradation (75th%ile) (USD)	Cost of upgradation (90th%ile) (USD)	No of Projects	Average expenditure Per Project Per Year (M USD)	Average Coffee Farmers Targeted Per Project	Average Expenditure Per Project Per Farmer Per Year (USD)
BRAZIL	7,019	14,734	6	3.68	79,326	132
COLOMBIA	825	2,018	9	0.85	18,921	92
COSTARICA	1,053	2,515	2	0.15	2,199	37
ETHIOPIA	19	100	10	0.4	29,830	41
GUATEMALA	190	573	6	0.29	4,460	162
HONDURAS	909	2,243	14	0.57	36,262	426
INDONESIA	104	305	17	0.42	9,829	85
KENYA	-9	-23	7	1.25	10,081	78
MEXICO	578	1,349	9	0.59	5,661	290
NICARAGUA	341	955	10	0.7	3,858	261
PAPUA NEW GUINEA	237	773	8	0.13	3,436	253
PERU	535	988	9	0.49	6,975	210
RWANDA	18	45	6	10.49	62,649	54
UGANDA	41	105	16	1.3	34,980	108
VIETNAM	-567	-1,466	14	1.17	27,017	152

Category	Number of Projects	Average Expenditure Per Project Per Year (M USD)	Average Coffee Farmers Targeted Per Project	Average Expenditure Per Project Per Farmer Per Year (USD)
Development agency	42	1.62	18,473	532
INGO	3	0.1	66,718	6
Impact investment fund	2	0.09	649	99
NGO	2	0.05	74	602
National government	11	10.24	72,409	1,800
Private sector	48	1.44	36,263	66
Total	108			

ICO Sustainability Projects Mapping database (preliminary data analysis)

ANNEX IV SUSTAINABLE CREDIT GUARANTEE SCHEME TO PROMOTE SCALING UP/OUT OF ENHANCED COFFEE PROCESSING PRACTICES IN ETHIOPIA AND RWANDA (2016)

The Sustainable Credit Guarantee Scheme (CFC/ICO/48) executed by CABI Africa was a significant venture aimed at enhancing coffee processing practices in Ethiopia and Rwanda. Running from August 2011 to December 2016, the project had a clear geographic focus, partnering with the Ministry of Agriculture in Ethiopia and the National Agricultural Export Development Board (NAEB) in Rwanda. With a budget of \$8,147,494, it was supported through a mix of grants and loans from the Common Fund for Commodities (CFC), the Rabobank Foundation, and various local banking institutions.

Built on the successes of a pilot project, this initiative sought to upscale good coffee processing practices. It focused on empowering smallholder farmers and primary cooperatives with the necessary skills, knowledge, and financial means to enhance coffee production and processing in Ethiopia and Rwanda. The project was anchored in five key outcomes: developing and rolling out of a credit guarantee scheme, amplifying the impact of improved coffee practices, strengthening of cooperatives and unions, improving access to production and market information, and enhancing project execution.

The project faced and addressed several critical challenges. Among them was the issue of financial access constraints. Slow loan processing times, a lack of deep understanding of risk, and suboptimal communication within banks were pinpointed as significant obstacles impeding the flow of credit. Additionally, there were evident capacity gaps within the cooperatives themselves; many suffered from inadequate management, undeveloped governance structures, and limited financial literacy, all of which restricted their ability to secure necessary credit. Compounding these issues, market volatility introduced another layer of risk, with price fluctuations threatening the cooperatives' ability to repay and maintain financial stability. These challenges demanded a responsive set of strategies to ensure the resilience and growth of the coffee sector's financial foundations.

The project responded to the challenges in the coffee sector with a robust selection process for cooperatives, enhancements to the loan system for better suitability to local needs, and extensive capacity building. These strategic efforts were aimed at improving financial management and agricultural practices, ensuring cooperatives were well-equipped to thrive in the coffee industry of Ethiopia and Rwanda. However, it is recommended that future projects allocate at least two years for capacity building before commencing loan access components, with a four-year loan guarantee period that tapers off gradually.

A significant outcome was achieved in financing, particularly in Ethiopia, as cooperatives were able to secure loans for the very first time, marking a milestone in direct cooperative financing. Through a series of training sessions, there was a marked improvement in the understanding of the coffee value chain among stakeholders. As a result, cooperatives developed better business plans, which in turn facilitated more informed practices in both lending and borrowing. Additionally, the project played a pivotal role in institutional strengthening. It fostered the professionalization and financial autonomy of cooperatives, thereby bolstering their influence and functionality within the C-GVC.

PARTNERS



This Report was prepared by the ICO integrating external contributions and comments by several experts from academia, the financial sector and the coffee industry with inputs by the ICO internal team.



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The International Trade Centre (ITC) contributed in-kind with original content and insights developed through ITC's Finance for Action work in Agribusiness and provided feedback and inputs to this Report in line with ITC and ICO's Memorandum of Understanding and partnership.