



**Summary report of the 8<sup>th</sup> Consultative  
Forum on Coffee Sector Finance**

**Background**

1. The 8<sup>th</sup> Consultative Forum on Coffee Sector Finance took place during the week of the 122<sup>nd</sup> Session of the International Coffee Council in London on Tuesday 18 September 2018. This year's theme "Harnessing technology and innovation for investments in the coffee sector" aimed at exploring how digital technologies and new financing instruments could improve coffee growers' access to finance. The Forum was chaired by Mr Kirill Matrenichev of the Russian Federation. It brought together, as panellists and moderators, experts from the technology and coffee sector, from the financial industry, international organizations and academia.
2. The presentations and background documents for the Forum can be found on the ICO's website at [http://www.ico.org/forum8-e.asp?section=Meetings\\_and\\_Documents](http://www.ico.org/forum8-e.asp?section=Meetings_and_Documents).

## **SUMMARY REPORT OF THE 8<sup>TH</sup> CONSULTATIVE FORUM ON COFFEE SECTOR FINANCE**

### **Welcome and opening remarks**

1. The Chair of the Consultative Forum on Coffee Sector Finance, Mr Kirill Matrenichev, welcomed participants to the 8<sup>th</sup> Forum. He noted that over the past seven years the Forum had been the focal point of discussions covering a wide array of topics, ranging from improving access to finance and risk management tools to strengthening the role of public and private sector in addressing constraints to production that currently hold back coffee farmers in many countries. He stated that the theme of the 8<sup>th</sup> edition of the forum 'Harnessing technology and innovation for investments in the coffee sector' aimed at exploring how digital technologies and new financing instruments could improve coffee growers' access to finance.

2. In his opening remarks the Head of Operations stressed the importance of the Forum as an opportunity to share innovative solutions and technologies that can foster access to finance for smallholder farmers and the coffee sector as a whole. He further pointed out that, as discussed in the opening session of the Council, the Forum would provide significant inputs on to how to address coffee price level and volatility, as well as on the role of women in the coffee value chain since they are often more vulnerable to price and climate shocks.

### **Framing the discussions**

3. The Senior Economist was invited to give a presentation that framed the discussions of the two subsequent panels. He noted that access to finance was a precondition for high productivity. Working capital loans and funding for long-term investments enabled farmers to buy seasonal inputs and to improve and modernize their farms and to depreciate assets. Investments in the sector were crucial both in view of growing demand for coffee and the impact of climate change on production. However, the Senior Economist added, coffee farmers, especially smallholders, had limited access to formal and informal finance as the perceived agricultural and market risks were high and access to risk management tools at farm level was inadequate.

4. Against this backdrop, the objective of the Forum was to learn about new technologies and innovative approaches currently being implemented, for example blockchain applications and index insurance against price volatility. The aim was to discuss the potential for adoption of these innovations in the coffee sector and to identify the barriers that needed to be overcome so as to ensure financial inclusion. Furthermore, the Forum would explore how

impact investments, as well as climate and green bonds, could channel additional funds into the coffee sector, supporting investments in the rehabilitation and renovation of ageing coffee trees as well as to increase productivity and resilience to the impact of climate change. The experts would also discuss how to ensure through smart finance instruments and structures that additional funds channelled into the sector reach and benefit marginal producers.

**Panel 1: Technological innovations**

5. The panel was introduced and moderated by Ms Nancy Cheruiyot, Managing Trustee, Commodities Fund (Kenya).

*Democratizing Price Risk Management for Coffee Growers, Mr Richard Counsell, CEO & Founder, Stable*

6. Mr Counsell began his presentation by stating that agricultural producers, including coffee farmers, differed in their ability to manage price risks. The high cost and complexity of traditional price risk management tools, such as derivatives, resulted in a bias towards large-scale farming operations that were sufficiently sophisticated to understand and effectively use these instruments and had adequate financial resources. In contrast, innovative insurance against price volatility would enable producers to protect also small quantities of coffee, making the product accessible to smallholders. Mr Counsell continued by explaining the design of an index-based insurance that protects farmers from swings in commodity prices.

7. The first step in the provision of an insurance product would be to build a portfolio of agricultural commodities that were not correlated in order to diversify risk, allowing price movements of coffee in Central America to be balanced out with, for example, cut flowers and dairy from other production regions. This process required a complex computer-based model that had been developed in conjunction with leading universities. The second key element of the insurance platform would be a credible price index for the respective agricultural commodities. Farmers would then be enabled to guarantee the price they receive when selling their coffee over a certain amount of time, e.g. several months. Farmers who purchased the insurance would pay a certain insurance premium and receive a digital certificate. If the price dropped below the index, the loss would be calculated automatically and the insurance payment would be triggered. Mr Counsell added that, in order to keep costs of service delivery low, the insurance would be typically sold to co-operatives. Alternatively, insurance products could be bundled with other inputs, e.g. fertilizers or pesticides. Bundling was perceived as a way to simplify the purchase of insurance for farmers, typically resulting in higher up-take rates.

8. Mr Counsell concluded that future products could include price insurance for suppliers of agricultural equipment. This would enable equipment suppliers to offer flexible rates to farmers (e.g. for finance such as leasing) taking into account commodity price fluctuations and the impact on growers' liquidity.

*Technology, blockchain and finance. Mr Daniel Jones, CEO & Founder, bext360*

9. Mr Jones began by stating that he represented a technology start-up that was developing a wide array of software-as-a-service products to agricultural producers, including coffee farmers. In his presentation he would focus in particular on how blockchain technology could drive lending to coffee farmers, while identifying four main drivers of change in the coffee sector: first, the growing demand for coffee worldwide, with consumption expected to increase by 50% by the year 2032; second, the rise of conscious consumerism, including greater interest in traceability from farm to cup; third, infrastructural upgrades in coffee producing countries that allow wider access of farmers to digital devices and services; and fourth, technological innovation in the area of machine vision, blockchain.

10. Mr Jones continued that an innovative application developed for the coffee sector was the use of machine vision (remote sensing) and machine learning to detect coffee quality at the washing station level, while predicting coffee cupping scores based on the correlation between visual traits of coffee cherries and quality characteristics. This novel approach provided the opportunity for an instant quality assessment of coffee and sorting into micro lots of similar quality. The technology enabled the establishment of an instant digital record of quality for individual farmers or, in some cases, an instant digital payment to farmers. The combination of the machine vision with blockchain would allow one to trace the quality measured at farm level throughout the value chain, from producer to retail level. Markers would ensure unique identification and verification, e.g. of the type of product and its origin down to the level of individual batches. Conscious consumers with an interest in how and by whom the coffee they purchased was produced could access some of the information. This would help creating a link between end consumers and growers. Finally, the blockchain technology in combination with crypto-currencies or digital tokens could be used to more efficiently provide loans from financial institutions to co-operatives and farmers. Mr Jones stressed that the digital tokens were linked one-to-one to fiat currencies in the respective countries.

*Technology initiatives of the Coffee Board of India, Dr Yenugula Raghuramulu, Director of Research, Central Coffee Research Institute (India)*

11. Dr Raghuramulu began his presentation by providing basic characteristics of the Indian coffee sector such as harvested area, output and productivity levels for coffee year 2017/18. Coffee was produced by more than 360,000 growers, the majority of which were smallholders. India was a dual producer of Arabica and Robusta coffee with output levels reaching 95,000 MT and 221,000 MT, respectively. The structure of the coffee sector posed a significant challenge to the Coffee Board of India, a public institution that develops and disseminates new varieties, transfers skill and knowledge as well as conducts promotion activities

12. To bridge the knowledge and skills gap among the large number of small coffee producing households, a classic extension model with 170 extensionists had been employed. However, the extension officer/farmer ratio was already high when the workload of individual extensionists increased further by additional tasks, such as the distribution of subsidies to farmers. This negatively affected the effectiveness of the extension services. Against this backdrop, the Indian Coffee Board had launched a number of digital initiatives with the aim of increasing outreach, automating processes and lowering burdensome reporting requirements.

13. Dr Raghuramulu described various technology initiatives, including the development of a mobile app to automate tracking and reporting of extension officers. Furthermore, there was a pilot project involving 30,000 farmers who were provided with access to tailor-made extension services sent to mobile devices, including market information. Other innovative approaches included the development of hyper-local weather forecasts, identification of diseases and pests, such as white stem borer, based on pictures of infested plants taken and uploaded by farmers using their mobile devices, coffee leaf rust early warning systems based on real time climate data, and blockchain applications linking sellers and buyers in order to improve traceability along the value chain.

*Financial sector development in developing countries. Dr Thorsten Beck, Professor, London Business School*

14. Professor Beck started his presentation by stating that rural areas were under-represented in financial sectors of developing countries due to high transaction costs in providing financial services to smallholders, risks deriving from their informality, difficulties to enforce contracts, and the volatility of incomes derived from commodity production.

15. Over the past 10 years, financial innovation such as digital finance and mobile banking had helped enormously to overcome some of these barriers by breaking information barriers, insuring risk, and enabling cross-border payments for SMEs. Other benefits derived from reduced cost, risk and distance by connecting even remote smallholder to global investors. He stated that most innovations started in the private sector, often driven by new entrants in the market. However, he continued, the private sector was dependent on the governments to provide an environment conducive to innovation.

16. Professor Beck stated that government policies to foster the development and adoption of digital technologies should be innovation-friendly, inclusion-friendly and competition-friendly. The innovation-friendly approach would allow new products and delivery channels to enter the market, as in the case of the Mpesa mobile money service in Kenya. This service was based on mobile phone technology, does not require the user to have a bank account and is offered by a telecom company. While Kenya initially did not have legislation in place to regulate this service, the government decided to authorize a limited trial. This approach is now called the 'technological sandbox' and allows companies to try out new technologies on a limited scope and develop legislation based on the learnings from the pilot testing. The inclusion-friendly approach was required for high impact and postulates to implement services that reach a large part of the population. The competition-friendly approach would allow the reduction of entry barriers to new players, e.g. enabling telecom companies to enter the financial services sector.

17. Challenges that remain, Professor Beck concluded, included the significant gender gap with regard to access to finance, as indicated by the results of the Global Findex survey. However, technology could help women to overcome cultural and institutional barriers that continue to exist in traditional banking services. Another factor was the low financial literacy, especially in rural areas, which results in low take up, for example of index insurance. Benefits of these financial services needed to be explained better to potential beneficiaries.

18. The presentations were followed by a lively discussion that highlighted barriers to the adoption of digital technologies, both in terms of infrastructure and the regulatory environment in low-income countries. Responding to questions from the moderator and the audience, the panellists pointed out that digital innovation had the potential to reduce risks and costs of providing services in rural areas since: no brick and mortar bank branches were necessary; digital IDs could increase transparency and reduce fraud; and bundling of services (e.g. index insurance with inputs) could increase uptake rates. Digital innovation, such as blockchain, also had the potential to foster regional integration, e.g. on the African continent, through cross-border financial transactions. The discussion concluded that the ICO could help to disseminate information about new technologies among Members and to connect projects with financiers.

**Panel 2: Innovative financial instruments**

19. The panel was moderated by Mr Alexander Borisov, Vice-Chairman of Rusteacoffee. He introduced the speakers and facilitated the subsequent discussion.

*Sustainable Investing – Investing for Good, Ms Michaela Seimen Howat, Sustainable Debt Strategist, CIO Sustainable Investing, UBS Wealth Management*

20. Ms Seimen Howat started her presentation by characterizing sustainable investments. She explained that, from the viewpoint of the investor, these investments typically combine financial return and societal return across social and environmental dimensions. Sustainable investments could be subdivided in three categories: impact investing in particular impact areas (e.g. social or environmental) with clear measurement and tracking of impact created; investments following an inclusion strategy, i.e. integrating Environmental Success Factor (ESF) into traditional investments; and investments following an exclusion strategy, e.g. by excluding certain companies or industries (arms, tobacco) from the traditional investment portfolio.

21. Overall, sustainable investment was among the fastest growing innovations in the financial markets in the recent past and had positive prospects. The industry was growing due to a demographic change with regard to the ownership of wealth. Millennials will inherit over US\$24 trillion in assets by 2020. According to representative surveys, about 85% of millennials are interested in social impact investment, including environment and social impact routes. Likewise, women's economic power increases and asset ownership becomes more widespread. This was important since, similarly to millennials, women as a demographic group stated in a survey they would be highly interested in impact investment.

22. Ms Seimen Howat explained that the SDG framework of the United Nations was welcomed for giving a common language for wealth management divisions of commercial banks, their clients and the beneficiaries of investments, e.g. in the coffee sector. She pointed out that in the context of the coffee sector for example SDG1 "Ending poverty" and SDG 5 "Achieving gender equality" would be relevant. Ms Seimen Howat concluded her presentation by citing an estimate that in order to achieve the SDGs by 2030, around US\$3.9 trillion in investment were required annually. So far US\$1.4 trillion had been mobilized, leaving a gap of US\$2.5 trillion a year. While this was a significant investment requirement, this figure was dwarfed by the globally US\$130 trillion in private wealth that is held by the Top 1% wealthiest individuals. The SDG financing gap could be closed if more of these funds were channelled into sustainable and impact investing.

*Green and climate bonds, Mr Nick Silver, Co-founder, Climate Bonds Initiative*

23. Mr Silver started his presentation by providing an introduction into climate and green bonds. The proceeds of the bonds were invested in economies that needed to mitigate climate change, e.g. by transitioning to carbon-neutrality, but also to foster resilience to the impact of climate change, e.g. of the coffee sector. The market for green and climate bonds had grown exponentially over the past seven years since the first bond was issued by the World Bank. In 2018, Mr Silver estimated, that the annual issuance would exceed US\$200 billion.

24. Buyers of green and climate bonds were largely institutional investors, such as pension funds and sovereign wealth funds. Institutional investors that primarily have the fiduciary duty to generate returns were increasingly sensitive to ESG (environmental, social, governance) objectives. Mr Silver estimated that around 8% of overall funds search for ESG investments. Climate bonds were becoming attractive investment vehicles for those investors, who aim to shift assets from fossil to renewable energy in order to reduce portfolio risk. Currently low interest rates for alternative investments, e.g. government bonds, make the interest rate and risk profile of climate bonds attractive. The scope for investment in agriculture, however, had been limited so far, mainly due to the small size and fragmentation of farming operations and individual investment projects, which was difficult to reconcile with the large and aggregated nature of bonds as instrument for long-term investments.

25. The specific characteristics of coffee farming, with large up-front investment into plantations and the following long-term cash flow from selling coffee, could however, provide an opportunity for the use of green bonds to finance some of the sector needs. Mr Silver concluded that creating a bond required transferring a large number of small loans to coffee farmers into a large aggregated loan. This would result in significant distribution costs. He saw a role for the government to explore this avenue.

*Accelerating investments in coffee renovation and rehabilitation, Mr Herbert Lust, Vice-President Global Public Partnerships & Managing Director (Europe), Conservation International*

26. Mr Lust explained the approach taken by Conservation International (CI) to support the coffee sector. It included: finding ways of mobilizing and combining commercial investment with impact investments, philanthropic monies and government grants; enabling local communities to increase livelihood options and rural incomes without having to encroach on surrounding ecosystems; and increasing demand for sustainable coffee through working with buyers such as Starbucks and Walmart.

27. A specific example of CI's work was the Renovation and Rehabilitation (R&R) action network that brings together stakeholders to support R&R efforts of coffee farms to rejuvenate their coffee trees by sharing experiences, incorporating best practices and coordinating efforts and resources. Mr Lust further explained that CI had developed a guide book that summarizes the basic agronomic considerations behind R&R and contains a compilation of 40 case studies of successful R&R projects, fostering replication across coffee producing countries. He pointed out that these projects represented a total of US\$1.2 billion in investments from various sources including the public sector, development banks, value chain finance, NGOs, and social investors.

28. The challenge in broad-based R&R efforts was to reach those 12 million smallholders globally that are disconnected from impact investment or commercial investments. Mr Lust saw a clear role for grants and concessional finance to build the bridge, for example by growing small projects to a level that is bankable or by aggregating projects to make them attractive for commercial banks. Mr Lust concluded his presentation by pointing out that CI had received a US\$1 million grant from USAID to test this approach, working with commercial investors, impact investors and donors in order to provide tailored financial support for smallholder R&R.

*Taking advantage of sustainable and impact finance, Mr Andrey Kuleshov, Strategy and Development Adviser, Common Fund for Commodities (CFC)*

29. The majority of investors sought financial return while taking into account ESG objectives according to Mr Kuleshov. Impact investment however, he stressed, took this approach a step further as some of the financial return of a project was traded for non-monetizable societal benefits and results along social and environmental dimensions. Typically, there would be three types of instruments ranging from impact bonds to impact investment funds and green bonds. While the CFC had collected experience in impact bonds and steering project selection in impact investment funds, green bonds were not used as investment vehicle at this stage.

30. One of the activities of the CFC was to help matching impact investors and projects by identifying investment projects at the right stage and defining exit strategies. There was clearly a need to transfer knowledge and assist investors to better understand investments in commodity value chains and related impact pathways. Mr Kuleshov also pointed to the issue of 'impact washing' where an investment that substantially was not an impact investment was masked as such, for example by adding generic impact indicators. Third-party certification of impact investment products could help to avoid 'impact washing'.

31. The CFC representative further underlined the importance of the SDGs in providing a framework and common language for effective matching of impact investors and projects and helping to channel funds into the coffee sector. However, implementing a comprehensive reporting framework based on the SDG indicators could result in burdensome additional reporting requirements. Hence, the CFC reporting framework allowed for reporting on selected SDGs to lower reporting costs and red tape. Mr Kuleshov concluded his presentation by stating that a typical project in a low income country that was not able to meet the proper banking threshold may still require an element of concessionality.

32. The presentations were followed by a discussion moderated by Mr Borisov. Following questions from the audience, the panellists elaborated that green bonds should not be perceived as a silver bullet in closing the finance gap required to achieve the SDGs. While green bonds were well suited for large scale renewable energy projects, significant aggregation would be necessary to achieve scale effects in smallholder finance. Demand existed for grants and concessional finance to nurture projects and bring them to a level that was suitable for commercial investment.

### *Conclusion*

33. The Chair of the Forum summarized the discussion and drew three main conclusions. First, the rise of new technologies and the data revolution could have a significant positive impact on producers via various channels, including improved access to finance. The digital revolution had a great potential to transform the economy and the coffee sector. However, if not managed properly, technological change also had the potential to increase inequalities. Hence, it was important to ensure that small and marginalized farmers, such as female producers, can get access to and benefit from innovation. Otherwise, technology could increase the divide between the digital haves and have-nots. The panel agreed that there was a role for both the government and the private sectors to play in ensuring financial inclusion.

34. A second key conclusion of Forum was that the financing requirements of the coffee sector could also be met by new and innovative instruments. Blending of different finance instruments, for example impact investment and green bonds with grant elements, could be particularly effective. The challenge was not necessarily the availability of funds, but the availability of bankable projects. In this perspective, the Chair further added that it was very encouraging to see many institutions working on the design of structures and mechanisms that allowed matching financiers and their environmental and social impact objectives with projects supporting coffee growers and their communities. There was consensus among the

panellists that the 2030 Agenda for Sustainable Development and the SDGs provided an excellent framework and a common language for investors and those designing projects to formulate impact objectives and track progress, unlocking finance opportunities.

35. The third and final conclusion was that, in order to pursue sustainable coffee production that was economically viable, the collaboration of all stakeholders in the sector, the governments, the industry, NGOs and donors, was necessary. For example, governments needed to provide the right regulatory framework to facilitate adoption of new technologies, provide smart subsidies to increase uptake and ensure financial inclusion. Grants or concessional finance provided by the public sector could bridge the gap between smallholders and multilateral development banks as well as private investors, thereby improving the availability of finance for agricultural producers.