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## Abbreviations

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<tbody>
<tr>
<td>4C</td>
<td>Common Code for the Coffee Community</td>
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<tr>
<td>ADC</td>
<td>Agriculture and Forestry Research &amp; Development Center for Mountainous Region</td>
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<td>BMZ</td>
<td>German Ministry for Economic Cooperation and Development</td>
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<td>BP</td>
<td>Business Partner</td>
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<td>BPM</td>
<td>Business Partner Map</td>
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<td>BPT</td>
<td>Biodiversity Performance Tool</td>
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<td>CAS</td>
<td>Chemical Abstracts Service</td>
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<td>CB</td>
<td>Certification Body</td>
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<td>DKV</td>
<td>German Coffee Association (Deutscher Kaffeeverband)</td>
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<td>DOL</td>
<td>Department of Labor</td>
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<td>EVI</td>
<td>Enhanced Vegetation Index</td>
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<td>EWiC</td>
<td>Ethiopian Women in Coffee</td>
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<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<td>FiBL</td>
<td>Research Institute of Organic Agriculture</td>
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<td>FSA</td>
<td>Farm Sustainability Assessment</td>
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<td>FSS</td>
<td>Food Security Standard</td>
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<td>GCP</td>
<td>Global Coffee Platform</td>
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<td>GHI</td>
<td>Global Hunger Index</td>
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<td>GHG</td>
<td>Greenhouse Gas</td>
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<td>GIS</td>
<td>Geographic Information System</td>
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<td>GRAS</td>
<td>Global Risk Assessment Services</td>
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<td>GRI</td>
<td>Global Reporting Initiative</td>
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<td>GSI</td>
<td>Global Slavery Index</td>
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<td>HDI</td>
<td>Human Development Index</td>
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<tr>
<td>IISD</td>
<td>International Institute of Sustainable Development</td>
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<td>IMS</td>
<td>Internal Management System</td>
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<td>IP</td>
<td>Improvement Plan</td>
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<td>IPBES</td>
<td>Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services</td>
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<td>IPCC</td>
<td>Intergovernmental Panel on Climate Change</td>
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<td>IPM</td>
<td>Integrated Pest Management</td>
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<td>ISEAL</td>
<td>International Social and Environmental Accreditation</td>
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<td>ITC</td>
<td>International Trade Center</td>
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<td>ISO</td>
<td>International Organization for Standardization</td>
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<td>IWCA</td>
<td>International Women's Coffee Alliance</td>
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<td>JDE</td>
<td>Jacobs Douwe Egberts</td>
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<td>LUC</td>
<td>Land Use Change</td>
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<td>ME</td>
<td>Managing Entity</td>
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<tr>
<td>NGO</td>
<td>Non-Governmental Organization</td>
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<td>OECD</td>
<td>Organisation for Economic Co-operation and Development</td>
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<td>SAI</td>
<td>Sustainable Agriculture Initiative</td>
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<td>SDG</td>
<td>Sustainable Development Goal</td>
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<tr>
<td>SMC</td>
<td>Simexco Dak Lak Ltd</td>
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<tr>
<td>ToC</td>
<td>Theory of Change</td>
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<tr>
<td>WGI</td>
<td>World Governance Indicators</td>
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<tr>
<td>ZEF</td>
<td>Centre for Development Research</td>
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“The main objective of voluntary certification schemes is to serve people and nature, contributing to and fostering sustainable development.”
For many people, there is no other way to start the day, than by drinking a delicious cup of coffee. This beverage has become so intertwined with our lives that we have long taken it for granted and no second thought was given to its production. Yet, this is changing now, with more and more consumers being interested in the conditions under which the coffee they purchase has been produced.

The pandemic, which hit humanity in 2020, additionally exposed the fragility of the global supply chains, negatively affected international trade and increased the vulnerability of coffee farmers. With medium- and long-term impacts yet to be known, many are starting to think ahead and plan a sustainable recovery. Numerous governments increased or are about to increase their requirements for human rights and environmental due diligence in their supply chains, whereas conscious consumers are asking uncomfortable questions which were avoided for a long time. These questions regard, among other, possible human rights violations, unfair labor conditions, and harmful unsustainable agricultural practices. Increased consumer awareness and corporate consciousness turned into powerful triggers for the rise and growth of voluntary certification schemes in the coffee sector, which we at 4C experienced as well with a double-digit growth in the last two years.

The main objective of voluntary certification schemes is to serve people and nature, contributing to and fostering sustainable development. As national law enforcement is often weak in coffee producing countries, certification schemes are an alternative to fill this gap to ensure that social, economic, and environmental regulations are complied with. They pursue transparency and, being independent entities, can provide an unbiased assurance that the product is as sustainable as possible and truly benefiting the farmers who produced it, their workers, and the environment, while continuously following increasing requirements from certification schemes. Thus, through sourcing certified products, retailers and brand owners enable consumers to make conscious choices, whilst certification in its turn contributes to better lives of farming communities. This is especially valuable in the coffee sector, where coffee remains central to the livelihoods of millions of small farmers.

Coffee is grown in countries of the Global South, many of which have not yet achieved food security. Social sustainability can only exist if the human right to food is fulfilled. Therefore, 4C is committed to ensuring that the food security of farmers and workers is comprehensively addressed in the certification. 4C is the first sustainability standard for coffee to offer a certification that includes the respect of the human right to food by integrating requirements of the Food Security Standard (FSS) as an additional certification to the core 4C standard.

We surely have to keep in mind that certification is not a silver bullet and cannot solve all problems. Yet it is a vital supporting tool in a smart mix necessary for achieving the UN Sustainable Development Goals. Project-based approaches are a valid option to reach specific communities and tackle desired topics but do not offer the same geographical scope as certification schemes have, hence serving rather as a supplement than as an alternative. Certification is the only viable instrument to provide evidence of sustainability in global commodity markets and global supply chains. Certification also has a regulatory value, helping to meet increasing due diligence requirements on national and global levels.

This report demonstrates how 4C developed over the years, what impact was achieved, especially considering its transition from verification to certification in 2018. This includes improvements in such areas as risk assessment, supported by modern technologies based on remote-sensing data, traceability, digitalization, capacity building, and integrity of the 4C System. Today, 4C is a globally leading certification system with a comprehensive standard, covering environmental, social and economic sustainability dimensions. This is confirmed by independent international benchmarks, such as the ITC Standards Map and the SAI Platform. The 4C standard does not allow land conversion of high carbon stock and biodiversity rich areas and promotes human, labor and land rights as well as sufficient farmer training to increase their productivity and resilience.
The current report showcases the many ways in which 4C has supported the sustainable development of the coffee sector through disseminating good agricultural practices, preventing deforestation with the help of innovative tools, improving social conditions on the ground, and enabling continuous improvement of farmer groups. 4C always thrives for science-based solutions and, therefore, maintains a close cooperation and dialogue with various research organisations and universities in Europe, the Americas, and Asia. Beyond assurance services, 4C actively participates in initiatives and develops projects which are also reflected in the current report. 4C’s projects are based on long years of expertise in the coffee and sustainability area, and focus, among others, on reducing, in/offsetting carbon footprints to produce climate friendly coffee, empowering women in coffee and increasing biodiversity with a pilot currently running in Vietnam. In addition to that, a large project in Colombia was launched in 2020 together with German and local partners in order to improve agricultural management of coffee smallholder farms and to contribute to their economic and ecologic viability, increasing attractiveness for young adults, as well as market uptake in Europe.

We worked hard to tackle the complex topic of impact assessment in a comprehensive way. The Theory of Change was created in a thorough process, mapping activities, strategies and the goals we want to achieve in the short- and long-term. The impact assessment further draws on the carefully analyzed data from the core 4C database, including evaluation of numerous audit reports and results of internal assessments over the last years. A comprehensive survey was conducted among the 4C certified producer groups and certification bodies cooperating with 4C, the detailed results of which are presented in the report. We also collected feedback from additional stakeholder groups, including industry and trade actors, civil society and research organizations. Last but not least, a few case studies were developed to illustrate the impact on the ground. This is the first impact report for 4C, which is part of our monitoring and continuous improvement process, and we aim to maintain the tradition of publishing impact reports on a regular basis to test and evaluate the effectiveness of the certification scheme. In this way, 4C contributes to your morning coffee tasting great while also serving the people who produce it and the planet who provides it.

4C’s first and foremost goal is to anchor sustainability in the coffee supply chain and support both parties on the producing and consuming side on their path to a more resilient and sustainable coffee world. We hope you enjoy reading and get inspired by this report.

Sincerely,

Rafaël Schneider & Norbert Schmitz
2.
Executive Summary

4C (The Common Code for the Coffee Community) is an independent third-party certification scheme for the sustainable cultivation, processing, and trading of coffee. 4C aims at anchoring sustainability in coffee supply chains across environmental, social, and economic dimensions. 4C coffee is produced in 18 countries with more than 315,000 farmers producing 4C certified coffee, as of December 2021. In total, around 1.6 million metric tons of coffee were 4C certified. With this first Impact Report, 4C is proud to share its story with its stakeholders.

The 4C Code of Conduct was developed in a participatory and transparent multi-stakeholder process, including representatives out of the coffee industry and civil society. The requirements of the 4C Code of Conduct support 16 out of the 17 UN Sustainable Development Goals (SDGs), as also shown by independent evaluations (ITC, 2020). The latest revision of the 4C Code of Conduct and further 4C System documents, in line with the ISEAL Alliance recommendations, was an important step in the continuous improvement process of 4C. It involved internal and external stakeholder consultation rounds and was finalized on the 1st July 2020.

4C has significantly developed and progressed over time: from a joint commitment of the coffee industry in 2003 to the 4C Association and 4C verification system in 2007 to a credible and robust 4C certification scheme with high-quality sustainability requirements in 2018. The last two years brought substantial changes, including replacement of the traffic light system and development of a comprehensive audit checklist, introduction of innovative remote sensing technologies to support risk assessments and facilitate verification of various violations unacceptable for the 4C System, among them, the cutting of primary forest and damaging high biodiversity areas. Further digital tools made the certification process more transparent and efficient as well as user-friendly. These include, among other, the 4C Smallholder and Tracking App, 4C Classified Chemicals Tool, and automatization of compliance checks via the 4C portal. Serious independent benchmarks, including ITC Sustainability Map and SAI Platform, prove the comprehensiveness of the modern 4C sustainability standard.

4C ensures that good agricultural practices and the protection of soil, water, and air are applied, that human labor, and land rights are respected, and that farmers are sufficiently trained to increase productivity and profitability. 4C pursues an inclusive approach, which is intended to enable coffee producers, and especially smallholders, to enter certification in order to achieve a real impact on the ground in a continuous improvement process and to improve the livelihoods of farmers. Currently, four out of five 4C coffee producers are smallholders.

Since its start of operation in 2007, a total of over 1,320 licenses and certificates have been issued in the 4C system. Up until 2018, 4C was a verification system issuing licenses and since then, 4C is a certification system issuing certificates. The certified area as of December 2021 covered almost 800,000 hectares with most of the coffee originating from Vietnam and Latin America, Brazil in particular. In order to allow for continuous improvement, Improvement Plans and their consequent implementation by 4C Units are essential for the 4C System. Monitoring and evaluation of each 4C Unit’s progress are done on an annual basis. A recent survey conducted among 4C System users has shown that the strongest impact of 4C certification in the environmental dimension on a farm level lies in the use and handling of pesticides, waste management, water and soil conservation, soil fertility, as well as wastewater management. For the social dimension, the improvements in occupational health and safety, as well as the reduction of child labor were prominent. The biggest positive change in the economic dimension regarded higher traceability level within the 4C Unit, enhanced coffee quality, and productivity increase. Case studies from Colombia and Vietnam are included in this report to vividly demonstrate how 4C supports smallholders and generates a positive impact for farmers, resulting, among others, in the introduction of more efficient water conservation and treatment systems or trainings for farmers and auditors.

4C puts a special emphasis on capacity-building activities and conducts regular trainings for auditors and Managing Entities of 4C Units. These trainings are crucial for solid quality and risk management. 4C also expanded its Integrity Program to ensure the credibility of the 4C System: this includes monitoring and assessments of 4C System users, planned randomly, or on a risk basis.
Traceability is another important aspect ensured by 4C. Tracing the physical flow is made possible through mandatory reporting. Today, traceability of 4C certified coffee is enabled throughout the whole green coffee bean supply chain. Since 2018, it is also possible to use the 4C logo on-pack, supporting the sustainability commitment and highlighting the effort companies make to their customers. In addition to the standard certification scheme, 4C expanded its activities with the launch of the new Add-On Carbon Footprint, addressing the increasing importance of the carbon footprint of green coffee production.

Beyond certification activities, 4C participates and implements multiple projects to improve specific aspects of the coffee supply chain and its impact on the ground. 4C develops tailor-made solutions such as measuring, reducing, and in-/offsetting GHG emissions, soil health program, maps land use change and addresses important social issues, including child labor, women empowerment, and smallholder livelihoods. For instance, the on-going 4C project in cooperation with Melitta Europe and co-funded by the Deutsche Investitions- und Entwicklungsgesellschaft (DEG) aims at improving working and living conditions of coffee smallholders in Colombia.

Furthermore, to stay in close contact with coffee stakeholders and promote sustainability on the global coffee agenda, 4C has conducted several stakeholder conferences, among them the first 4C Global Sustainability Conference 2019 in Berlin and 4C Regional Stakeholder Conference 2020 in Guatemala. In 2020, 4C put a special emphasis on supporting the 4C System users and stakeholders in the difficult situation caused by the COVID 19 outbreak. 4C included not only developing remote solutions for certification audits but also conducting regular 4C trainings in a virtual format and organizing 4C Online Seminar Series to support the dialogue and bring together the coffee and sustainability communities. Almost 1,000 people participated in the 4C trainings and events in 2020, and 1,200 in 2021.

Recognizing the value of joint international multi-stakeholder cooperation, 4C is a dedicated member of the Global Coffee Platform and its Technical Committee as well as the German Coffee Association. In 2019, 4C has also become a partner in the Sustainable Coffee Challenge and thus strengthened its commitment to promote deforestation-free coffee supply chains.

Although it is always a complicated task to evaluate the impact, 4C did its best to collect as much quantified information as possible based on its internal database, audit report evaluations, tool data, and stakeholder surveys. These are complemented with 4C System user statements and case studies.

It is of great importance to evaluate and monitor the impact created, as scepticism towards the effectiveness of voluntary sustainability standards in general persists. Certifications do have their limits, conditioned by the external environment, including the absence of legislative support. However, it is hard to deny that voluntary sustainability standards greatly contribute to sustainable development in their focus sectors. Certification can help transform the entire sector but not if merely a small share of producers are certified: with more customers asking for certified goods, impact on the ground will increase rapidly and automatically. 4C System users provide evidence of positive changes for their farms, families, and communities driven by 4C. This implies manifold benefits brought by joining the 4C System, including greater credibility and access to the market, the introduction of good agricultural practices and production techniques, contributing not only to healthier nature but also increasing the quality of coffee, better working conditions, and improved livelihoods for producers. Sustainability certification also improves access to financing and advantageous interest rates. And this is just the beginning of a journey: 4C is determined to further pursue its mission, repeat and multiply successes and learn from challenges, bringing in and embedding more sustainability in the world of coffee.
3. Theoretical Framework

The world consumes approximately 2 billion cups of coffee per day (BCA 2020). Most of the coffee comes from countries with poverty issues and a lack of governance and social infrastructure. Coffee is also grown in areas with high biodiversity and the expansion of coffee growing areas threatens tropical forests. At the same time, the coffee market is highly competitive with price being a key purchase decision factor, thus putting pressure on the economic viability of growing coffee. Consumers often do not know where the coffee they bought comes from, or under which conditions it has been produced. Although there is a desire to consume sustainable coffee, securing and offering it remains a challenge.

Sustainability is a concept that aims to make sure that in the long term an economic activity, such as growing coffee, processing and distributing it, meets three objectives. All activities are organized and conducted in a way that:

1. They create a stable social environment securing basic human needs.
2. They provide a profitable economic business environment for all supply chain actors.
3. They respect the integrity of the natural environment and preserve resources.

It appears that achieving sustainability by letting market forces rule alone does not work. The reason is twofold. There is an information gap on the sustainability within the coffee supply chain and an incentive gap for changing unsustainable practices towards more sustainable ones. The information gap essentially rests on the fact that markets alone provide information about the price and quantity of a product, but not necessarily other important information such as its quality or - in this case - unsustainable processes, mostly at the farm level where the coffee is grown. This information needs to be created and then transparently communicated downstream. It needs to be tied to the physical product through its various processing steps to the end consumer.

The incentive problem of unsustainable supply chains runs in the opposite direction, i.e. from the end consumer upstream towards the supplier of the raw material. The desire of end consumers to buy a sustainable product instead of an unsustainable one needs to be communicated and incentivize all parties in the supply chain. The incentive usually rests on a financial advantage for moving towards more sustainable activities. It can only be realized if the information about sustainability is tied to the product and thus can achieve a price premium for its sustainability. And this premium should benefit especially the primary producers of the coffee beans, mostly smallholders.

This two-way flow of sustainability information from the producers to the consumer in the form of sustainable processes and from the consumer to the producers as the incentive to provide a sustainable product can be achieved through certification. Certification adds information about the sustainability of the product to the information that the market provides, i.e. price of a product. It supplements information in market transactions by quality information about a product itself or the conditions under which it has been produced.

Some verification and certification systems provide information about the quality and taste of products or their origin, thus identifying a specific aspect of the product. In the case of sustainability information, a broader set of data needs to be processed since sustainability certification covers environmental, social, and economic dimensions simultaneously.
Certifying the sustainability of coffee supply chains presents a number of challenges that are particular to coffee. First of all, production is characterized by a huge number of geographically dispersed producers. About 80% of all coffee is grown by smallholders who would be required to produce sustainably, and this would need to be controlled. Secondly, the supply chain includes intermediaries and roasters that are facing strong price competition. Most coffee around the world is sold in supermarkets based on price thus creating a strong incentive for roasters to source raw coffee at lowest prices.

Certification is faced with the task to differentiate sustainable from unsustainably produced coffee on a supermarket shelf. This can only be achieved by making sure that the numerous small producers actually meet the sustainability requirements. In their turn, intermediaries, roasters, and brand owners must enable genuine gapless traceability of the supply chain through complying with corresponding reporting requirements. Finally, consumers need to be able to easily identify sustainable coffee.

Given the huge global production of 9 million metric tons of coffee beans, mainly produced by small farms, certification is the only method to cover such a large activity across the globe. There are also numerous project-based activities aiming at moving towards more sustainable production practices. They can be successful in selected areas but cannot achieve wide coverage as certification does.

Controlling processes in all three dimensions of sustainability - social, environmental, and economic - ensuring traceability of sustainable material at each step in the supply chain, and controlling the accuracy of the information on the final product are the tasks that certification needs to fulfill. Once these objectives are all met, a certified product will support the global sustainability goals, it will create incentives for producers to become more sustainable, and it offers consumers the opportunity to choose more sustainable products over those that are not sustainable in the long run. It goes without saying that globally sustainable coffee supply chains will not come into place overnight. The spread and success of sustainable coffee rely on a continuous process of improvements in farming practices and in expanding the coverage of certification in all coffee-growing areas on the earth.
4. Roles and Limitations

The sustainability of every supply chain depends on strategies pursued by its upstream and downstream actors as well as their governments. Each actor is confronted with a specific challenge: this way, coffee growers and producers are seeking to implement good agricultural and social practices, whereas securing the commitment to responsible sourcing is a concern of many roasters and brand owners. The actions of the supply chain actors are not isolated in a vacuum but embedded into complex global supply chains and are influenced by various social, economic, and political factors on a local and international level.

In this multifaceted environment, sustainability standards intend to mitigate the general lack of governmental regulation or governance and provide information on the environmental and social conditions of coffee production. They aim at changing the way our world is producing a flavorful commodity such as coffee. To achieve this, sustainability standards develop comprehensive guidelines and tools for assessing performance, set progress targets, involve farm and integrity auditors, and allow for comparison through benchmarks, providing incentives for continuous improvement.

One of the biggest strengths of certification is its function as a driver of sustainability in the market, as it can offer crucial, previously unknown information on compliance of farmers, producers, traders, and other actors with sustainability requirements. Giving access to this valuable information, certification raises awareness, and engages consumers in sustainability, fostering demand for more ethical and environmentally conscious products. This can become a trigger for a price premium formation. To meet consumer demand, retailers commit to responsible sourcing and ensuring the implementation of sustainability requirements throughout the supply chain.

Third-party audited certification schemes help to establish credible supply chains and give assurance that coffee has been produced in a truly sustainable manner without undesired negative environmental and societal impacts. Producers also benefit from being able to enter a sustainable market niche and sell their sustainable products. It also incentivizes them to invest in their farms and keep producing sustainably. This prompts more producers to get certified to secure a better income in return for the efforts made.

Various studies confirm the positive effects of sustainability certification (Bray and Neilson, 2017; Panhuysen and Pierrot, 2018; Vanderhaegen et al., 2018). Currently, the majority of coffee is produced by smallholder farms. Smallholders commonly face many challenges, among them insufficient income and chronic underinvestment into farms, low productivity, and lack of market knowledge. Inclusive certification facilitates information flow and can guide smallholders, enable their participation in capacity building activities and help them implement new, earlier accessible techniques and good agricultural practices, increasing their productivity and, thus, income without forced expansion into forested areas and excessive use of hazardous chemicals to increase the yield. This is a valuable long-term contribution to slowing down the deforestation rate and reducing biodiversity loss, as well as chemical pollution of soil and water, problems that are high on the climate change agenda.
Global compliance with sustainability certification standards would significantly increase transparency and fairness of coffee supply chains and lead to more acceptable practices used to produce coffee concerning natural resources and pesticide use. The controversial results delivered by some impact studies are connected to limitations that voluntary certification schemes face. If a certain production standard is not required by state regulation, which is true for coffee, actors lacking intrinsic sustainable values will often not consider implementing certification. This can be overridden by other stakeholders: as described above, consumers can enforce the necessity to implement and source certified products.

However, it can be the case that the demand side does not create enough incentives, in particular, for producers to supply the desired quantities. Farmers and their cooperatives pay for certification without any guarantee that they will be able to find a buyer for the produced volume of certified coffee and eventually are forced to sell certified coffee as conventional, as sustainable products cannot compete with a price advantage of unsustainable products. When no premium is paid, it becomes difficult for farmers to endure the costs of moving to more responsible social and environmental practices (DeFries et al., 2017). As green bean sustainability certification remains voluntary, despite the environmental and social emergency, currently only about a third of the global coffee area is sustainably certified (Lernoud et al., 2018). The intended impact of implementing sustainability coffee certification is limited to this share of the market. The critique regarding the alleged ineffectiveness of sustainability certifications does not take into consideration the limited influence of voluntary schemes and often expects more of certification than it can deliver under the current regulatory circumstances. Therefore, certification's impact can be strongly improved if regulatory authorities enforce certain standards for which compliance is proven through certification.

Globally, companies start facing increasing pressure from government legislation, as multiple governments enact or develop laws that mandate a certain degree of supply chain due diligence. The EU is also working on a cross-sectoral European solution. At the basis are due diligence principles for identifying, preventing, mitigating and accounting for adverse corporate impacts. Certification is a proven and efficient method to take control of traceability, quality, and sustainability in highly complex global supply chains, and some regulations directly refer to it as a useful tool for supply chain due diligence. 4C certification creates shareholder and consumer value for companies, enabling responsible sourcing, transparent reporting, and credible communication. It also provides regulatory value, helping to meet increasing due diligence requirements on national and global levels.

Although sustainability certification is not a panacea, it is seriously needed to move the coffee world to more sustainable practices, and in a common effort together with producers, retailers, consumers, civil society, as well as local and international governments, reach the UN Sustainable Development Goals in the future.
5. Sustainability Challenges in the Coffee Sector

Coffee, much beloved and daily consumed by millions of people, faces today a number of environmental, societal, and economic issues, true also for many other agricultural commodities. Although coffee stands out due to its largest share of certified production area when compared to cocoa, tea, cotton, and others (ITC 2020), a particular challenge for certification and continuous implementation of improvement measures remains, which is engaging and bringing on board a large number of scattered smallholder farmers upstream.

Stages of the coffee bean production and processing:

- Coffee Cultivation
- Dry, Wet or Semi-Dry Processing
- Peeling and Sorting
- Roasting and Packing
- Shipping / Export

Figure 1. Stages of the coffee bean production and processing.
unsustainable business practices in the primary stages of the coffee supply chain (see Figure 1) create various problems. One of the major ecological issues is deforestation, which in this case means cutting down forests to make space for a coffee farm. Many countries, which currently demonstrate rapid growth of coffee production, obtain new land for cultivating further coffee crops via expansion into forested areas (Coffee Barometer, 2018). The majority of the world's key coffee-growing regions lie in the areas where biological diversity is the richest and the most threatened by the combined effects of deforestation and climate change (see Figure 2). Conversion of primary forest into farmland threatens irreplaceable habitats and causes biodiversity loss, endangering plants, and animal species.

Soil degradation, including soil erosion and decline of soil fertility, is another problem, as natural ecosystems permanently converted into coffee farms, lose and lack organic soil components. Soil degradation is considered to be one of the greatest challenges as poor management practices can quickly destroy the soil accumulated over centuries. The depletion of the main plant nutrition source negatively affects coffee harvest and quality.

The use of fertilizers and pesticides is meant to protect plants from various diseases and increase their yield. However, the uncontrolled use of harmful substances results in soil exhaustion as well as water and air pollution. The spread of coffee monocultures without shadow plants under the assumption of higher yields also contributes to insufficient soil moisture and soil depletion. Monocultural systems are also often based on quickly growing hybrid plants and require increased synthetic chemical input.

After harvesting, wet processing of coffee cherries, which remains a popular technique, requires the use of a substantial amount of water and creates organic matter waste. Wastewater and waste treatment practices are commonly limited or not in place, which leads to increased water pollution and, together with fertilizers used at the cultivation stage, to eutrophication.

Climate change and green coffee

Not only unsustainable coffee production damages the environment, but there is also a significant threat coming from the environment itself. Climate change for coffee farming means increasing temperatures, aggravated water deficit and evapotranspiration during the driest season combined with heavy rains flooding the plantations. These extreme conditions negatively impact coffee quality and yield, e.g. through unprecedented disease and pest spread.

The coffee plant is very sensitive to climate changes: it can endure neither excessive sunlight nor strong wind, and is highly dependent on soil fertility and humidity. Due to climate change, the future of many current areas for coffee production is uncertain. Countries like Brazil, India, and Uganda are predicted to lose more than 60% of their suitable coffee growing area by 2050 (Bunn et al., 2015). This could force farmers to look for further areas for expansion and lead to more issues connected to deforestation and sensitive area conversion.
The graph above demonstrates how deforestation is amplified by climate change. The negative impact of this amplification spreads much further than just deforestation, affecting both environmental and societal issues, among them water stress, pest and disease outbreaks, as well as increased vulnerability of smallholders and workers.
issues in coffee production are strongly interconnected. It is important to emphasize that coffee production is labor-intensive and heavily relies on human workforce as mechanization is costly and not always feasible, e.g. while picking arabica cherries for coffee of the highest quality. The biggest share of coffee is produced by farmers and their cooperatives.

Worldwide, 12 million farmer families that provide direct employment to more than 25 million worker families depend on coffee production as their main income source (International Coffee Organization, 2019a). Generally low and strongly fluctuating coffee prices make these dependent families highly vulnerable. Although the situation differs from country to country, it is common that coffee does not provide a viable livelihood to its producers and farmers are not getting even minimum wages. The number of farmers living below poverty line is increasing (International Coffee Organization, 2019a). Uneven margin distribution in the coffee market has an additional negative impact in the farmer's situation. Low prices combined with generally low productivity have a devastating effect on producer life. They cannot compensate for the costs of coffee production and hire enough farm workers. The risk of child labor increases as more and more farmers involve children in the working process to save costs and be able to undertake additional employment. Investments into farm modernization and rehabilitation are postponed or rejected as they become unfeasible with coffee farmers earning too little to secure their living conditions. Underinvestments in its turn results in higher risks and vulnerability to external factors, eventually leading to even lower yields and income in the long-term. Another problem is that coffee farmers do not have sufficient access to necessary credit and lack knowledge of the market.

Food insecurity and malnutrition became a common phenomenon in coffee-producing regions since people do not have enough means to get enough food (Panhuyzen and Pierrot, 2018). Those who have an opportunity are looking for alternatives to coffee and are willing to leave the sector (International Coffee Organization, 2019a). This is also why coffee farmers are aging, as younger people do not see coffee growing as an attractive path anymore.

The above-mentioned lack of economic resilience of farm smallholders is one of the leading factors in human rights infringements taking place in the first stages of the coffee supply chain. Farmers are under continuous pressure to cut costs and farmworkers become disproportionate victims. They often do not have fixed employment contracts, face risks of being paid less than the minimum, and work in precarious working conditions (Sachs et al., 2019). Health and safety procedures are not properly introduced. As for women, they often face discrimination in various areas: they remain invisible workforce, earn less, and have worse access to training and education opportunities.

The challenges considered above must not be seen as insurmountable obstacles, but trigger the coffee community, from producer to roaster, to act together to save coffee. 4C sees sustainability in coffee supply chains as a top priority. It is determined to improve the environmental, social, and economic conditions of coffee and processing and has already generated a positive impact, worth multiplying to enable sustainable prosperity of the coffee sector overall and each actor involved. You will find more detailed information on our principles in Chapter 6 “Who we are and What we do”. 
Who We Are
And What We Do

4C (The Common Code for the Coffee Community) is an independent third-party certification scheme for the sustainable cultivation, processing and trading of coffee. As a stakeholder-driven and internationally recognized sustainability standard for the entire coffee sector, 4C aims at anchoring sustainability in coffee supply chains across environmental, social and economic dimensions. 4C is a credible and robust system, applying innovative audit and risk assessment procedures, and is strengthened by a comprehensive integrity program. 4C brings real impact on the ground, enabling continuous improvement and enhancing smallholder livelihoods, and supports companies in achieving and keeping their sustainability commitments.

4C’s sustainability principles are set out in the 4C Code of Conduct, the focus of which is sustainable agricultural production of coffee and its post-harvest activities, including the environmental, social and economic dimensions. Certified are 4C Units, which consist of coffee producers, traders and processing operations and cover all elements of the cultivation of coffee.

4C constantly checks that coffee cultivation is not contributing to deforestation or reduction of biodiversity, that good agricultural practices and the protection of soil, water and air are applied, that human, labor and land rights are respected and that farmers are sufficiently trained to increase productivity and profitability.

4C pursues an inclusive approach, which is intended to enable coffee producers, and especially smallholders, to enter certification in order to achieve a real impact on the ground in a continuous improvement process and to improve the livelihoods of farmers. Remote sensing-based technologies help 4C and its auditors to conduct risk assessments and verify land use change. Furthermore, 4C offers a solution to certify climate friendly coffee through measurement and reduction of the carbon footprint of coffee production and processing.

Traceability in the 4C Unit is controlled. Tracing the physical flow of coffee throughout entire supply chains is possible through mandatory reporting of traded 4C certified coffee. Chain of Custody certification for Intermediary and Final Buyers is strongly encouraged, though not mandatory in order to handle coffee as 4C certified.

Companies purchasing 4C certified coffee can communicate their sustainable coffee sourcing to their clients and end consumers, and differentiate themselves in the market through the 4C logo on-pack.
6.1 MULTI-STAKEHOLDER INITIATIVE

The 4C Code of Conduct was developed in a participatory, comprehensive, transparent, and balanced multi-stakeholder process involving coffee producers, trade and industry as well as various civil society organizations from around the world. In line with the recommendations of the ISEAL Alliance for credible sustainability standard systems, the 4C Code of Conduct is reviewed, and revised if necessary, at an interval of every five years in a multi-stakeholder process. Apart from that, 4C regularly organizes trainings and events to facilitate multi-stakeholder dialogue both within the coffee community and beyond it. The results flow into the development and improvement of the 4C certification system and its impact. The 4C Advisory Board, a compilation of which reflects the importance of the multi-stakeholder approach for 4C, also supports the development of 4C and guides on strategic matters (see 6.4).

4C is constantly monitoring developments in the coffee sector to continuously improve the 4C certification system and to adjust it to current progress concerning the various coffee-relevant topics. To test adjustments in practice, 4C is conducting pilot projects, consultations with coffee farmers and key accounts prior to the implementation of new measures. In case of revisions of the 4C requirements, 4C provides an adequate transition period for its mandatory implementation.

Stakeholders do have the possibility to engage with 4C by giving feedback to the system through public consultations, directly via email, webforms, over telephone, in person, or through participation at our globally and regionally organized stakeholder conferences.

4C has conducted its first 4C Global Sustainability Conference in Berlin in 2019 to provide comprehensive insights into sustainability certification, its current and future practices, and the latest changes in the 4C scheme. Coffee producers, brand owners, traders, associations, government authorities, NGO's and research bodies shared their perspectives on practical solutions for sustainable coffee supply chains. 4C is continuing with the organization of this event on an annual basis.

In 2020, 4C started to offer virtual events called “4C Online Seminar Series - Sustainable Coffee Day”, to support the dialogue and bring together the coffee and sustainability communities, despite the difficult situation caused by the COVID 19 outbreak. The 4C Online Seminar Series continued to be offered during 2021, also in the Spanish language. Nearly 1700 unique participations were counted. Attendees provided their positive feedback and are looking forward to the continuation of this type of seminar series in the future.

To be in close contact with 4C implementers on the ground, 4C has set up Regional Stakeholder Conferences on all continents where the 4C standard is applied. The first 4C Regional Stakeholder Conference has taken place in January 2020 in Antigua, Guatemala, discussing the use of 4C in the region, the impact of sustainability certification, risk and land use change assessment, climate friendly coffee and climate change adaptation strategies as well as the latest market developments and sustainable sourcing strategies of traders and brand owners. Further 4C Regional Stakeholder Conferences will follow in the future, once it is safe for traveling internationally again. For now, 4C is planning virtual events in the main 4C languages, including Spanish, Portuguese and Vietnamese. Another important stakeholder group for 4C is the Certification Bodies (CBs) who cooperate with 4C and who are responsible for the consistent verification of compliance with the 4C requirements. CBs are welcome to participate in 4C's stakeholder conferences, working groups and other 4C events.

Apart from the close day-to-day communication between 4C and CB staff, 4C conducts regular opinion surveys and biannual CB feedback meetings to exchange ideas and practical experiences concerning the daily operations of 4C, discuss best practices to identify and reduce potential risks, and facilitate improvements of the system. During the last annual CB feedback meeting, the focus topics included smallholder definition, audit checklist, harvest season, and BPM analysis tool. This way, CBs are included in the multi-stakeholder approach of 4C and can support the implementation of best practices and the continuous improvement of 4C.
6.2 SUPPORTING SDGs

In 2015, member countries of the United Nations implemented the 2030 Agenda for Sustainable Development introducing 17 Sustainable Development Goals (SDGs) to foster synergetic activities of governments and agencies, institutions as well as companies and individuals on a global level to eliminate poverty, protect our planet and guarantee prosperity for all. 4C actively supports many of the SDGs by aligning the certification requirements to the associated targets and by endorsing and implementing sustainable projects.

4C’s vision (see 6.5 Theory of Change) is aligned with the UN SDGs. Through various channels, 4C contributes to all SDGs, yet some linkages are stronger than others. These contribution channels include ensuring the implementation of sustainability requirements of the 4C Code of Conduct, developing and conducting versatile sustainability projects, and supporting sustainability dialogue in the coffee sector.

4C especially fosters progress towards:

SDG 1. NO POVERTY

through improving smallholder livelihoods, supporting transparent pricing mechanisms and fair labor agreements.

SDG 2. ZERO HUNGER

by endorsing good practices to enhance food quality and soil fertility. An extended food security checklist can be integrated into the auditing procedure to address the issue and further increase food security levels in developing regions.

SDG 5. GENDER EQUALITY

through not allowing any form of discrimination and requiring that equal rights are secured with respect to gender equality. An additional tool to address gender disparities is under development.

1. See 4C Code of Conduct v. 4.0 - Principle 1.3, 2.1, 2.2
2. Through the strict requirements of the 4C Code of Conduct, 4C certification contributes to most of the SDGs. This is also confirmed by independent ITC benchmarking between voluntary sustainability standards and SDGs (ITC, 2020).
3. In cooperation with the Food Security Standard, developed by the WWF, Welthungerhilfe, and ZEF.
4. Principle 1.1, 1.4, 2.2, 3.1, 3.2, 3.3, 5.1, 5.2, 5.3
5. Principle 2.1
SDG 8. DECENT WORK AND ECONOMIC GROWTH

by enhancing working conditions, strengthening labor rights and thoroughly addressing child labor issues. 4C’s integrity assessments on a risk or random basis additionally ensure proper compliance with the requirements. 4C’s project aiming at improving working and living conditions for coffee smallholders in Colombia strengthens its contribution to SDG 8.

SDG 12. RESPONSIBLE CONSUMPTION AND PRODUCTION

via its requirements with regard to the responsible management of natural resources and waste.

SDG 13. CLIMATE ACTION

by requiring that primary forests are protected and climate change mitigation and adaptation measures are identified and implemented. Beyond the 4C Code of Conduct requirements, 4C conducts projects to measure, reduce and in-/offset greenhouse gas emissions in coffee production.

SDG 15. LIFE ON LAND

in addition to protection of primary forests, 4C works to preserve and restore high biodiversity areas, natural vegetation, fauna, soil and water sources and sensitive areas, as well as spread implementation of good agricultural practices.

SDG 16. PEACE, JUSTICE, AND STRONG INSTITUTIONS

through applying strict requirements, among others, the prohibition of engagement in any form of bribery and corruption and securing fair and transparent contracts between buyers and sellers of 4C certified coffee.
6.3 HISTORY & DEVELOPMENT

4C stands for the “Common Code for the Coffee Community” and has its origin in an excellent example of the commitment of the coffee industry, which is the foundation of the 4C Association in 2007 - the result of a collaborative project between the German Ministry for Economic Cooperation and Development (BMZ) and the German Coffee Association (DKV).

Initiated in 2003 with discussions on basic social, economic and environmental standards in coffee cultivation, the first version of the common code for the coffee community was launched in 2004. It was the result of a broad and democratic public consultation lasting 1.5 years, where more than 70 representatives from coffee producers, trade and industry, non-governmental organizations and unions developed the first version of the 4C Code of Conduct.

In 2007, the 4C Association did the finalization of the 4C verification system (formerly verification, today certification), the definition of the verification regulations and adapted the 4C Code of Conduct for its implementation and verification.

In 2013, a revision of the 4C Code of Conduct was started with a needs assessment among its stakeholders, and in December 2014, after another extensive multi-stakeholder process, the final revised code was approved by the council of the 4C Association and became effective in 2015, gradually replacing the previous version during a one year transition period. After this, only minor adjustments to the 4C Code of Conduct were made.

In 2016 the activities of the 4C Association were divided. Verification became a key element in the newly spun-off company Coffee Assurance Services GmbH & Co. KG to concentrate on the professional implementation of the 4C standard. The newly founded Global Coffee Platform (GCP) was commissioned to promote basic social, economic and environmental standards in coffee cultivation, and to serve as a platform for stakeholder dialogue. In 2018, Coffee Assurance Services GmbH & Co. KG was taken over by Meo Carbon Solutions, an independent management consultancy with a focus on sustainability, and renamed to 4C Services GmbH to underline stronger market and customer orientation. The assurance services of 4C have significantly improved thanks to comprehensive expertise in certification and sustainability available at Meo Carbon Solutions. In this way, 4C strengthened its strategies in digitalization and smallholder integration, launched risk assessment tools based on remote sensing to verify deforestation and biodiversity risks, and developed carbon footprint calculation, reduction, and in/offsetting measures, which flow into the 4C Carbon Footprint Add-On to the core certification.

Therefore, 4C is independent of GCP but remains an active member of it. Moreover, 4C is a member of the Technical Committee of GCP and contributes to GCP with technical input from a certification perspective to processes such as standard development and/or revision and interpretation of the baseline common code. In 2020, 4C launched a public consultation for a second formal review of the 4C Code of Conduct, following the ISEAL Alliance’s recommendations for reliable sustainability systems and standards. To review and amend the standard, if necessary, at five-year intervals through a multi-stakeholder process. After analyzing the feedback and its incorporation into the 4C Code of Conduct, the new version 4.0 of the 4C Code of Conduct was published.12

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Figure 3: Evolution and development of the 4C System

12: Date of publishing of the revised 4C Code of Conduct as well as other 4C System documents is 1st July 2023.
The organizational structure of today’s 4C consists of the 4C Advisory Board, the 4C Services Operations and 4C System users. The day-to-day operations, management and development of the 4C System are assigned to 4C Services GmbH. Stakeholders of 4C have the option to engage with 4C by either participating in the regional stakeholder dialogues and working groups, or by giving feedback to the system through public consultations or directly via email, over the telephone, or in person.

The 4C Advisory Board provides guidance and direction for the management of 4C Services GmbH. The 4C Advisory Board consists of representatives of various 4C stakeholder groups. The roles and responsibilities of the 4C Board as well as decision-making mechanisms are transparently described in the 4C Advisory Board By-Law which is publicly available on the 4C website.

Current members of the 4C Advisory Board:

Chairperson:
- Dr. Rafaël Schneider, Deputy Director Policy and External Relations and Coordinator Food Security Standard (FSS), Welthungerhilfe, Germany

Vice-Chairperson:
- Michael von Lührte, Coffee Market Consultant, Switzerland

- Marcelo Burity, Head of Green Coffee Development, Nestlé, United Kingdom
- Andreas Feige, Managing Director, Meo Carbon Solutions, Germany
- Dr. Jan Michael Henke, Managing Director, GRAS Global Risk Assessment Services, Germany
- Nhung Ngoc Ly, Chairman and Managing Director, ComCo Trading Co Ltd, Vietnam
- José Sette, Executive Director, ICO, United Kingdom
- Dr. Jennifer Wiegel, Regional Coordinator for Central America, the Alliance of Bioversity International and CIAT, Nicaragua
6.4 4C THEORY OF CHANGE

The 4C Theory of Change (ToC) maps out how 4C gets from the strategies it employs as a certification system to what it wants to achieve in the short and long term. It is a fundamental tool for the development of monitoring and evaluation (M&E) systems (ISEAL, 2014).\textsuperscript{13} 4C strives to create a well-functioning M&E system to be able to extract relevant guiding information to improve our processes.

Our statement: As an independent, stakeholder-driven, internationally recognized sustainability system for the entire coffee sector, 4C aims at anchoring sustainability in coffee supply chains across environmental, social, and economic dimensions. 4C is a credible and robust system, applying innovative audit and risk assessment procedures, and is strengthened by a comprehensive integrity program. 4C brings real impact on the ground, enabling continuous improvement and enhancing smallholder livelihoods, and supports companies in achieving and keeping their sustainability commitments.

To fulfill this multi-faceted vision of 4C success, 4C defines a three-pronged strategy reflected in the Desired Impacts:
- Environmental: Nature is protected, and resources are preserved
- Social: Human and labor rights are secured for farmers and workers involved
- Economic: Efficient coffee production and transparent supply chains ensure sustainable income for producers

Further elements of the 4C ToC describe how 4C intends to bring about the Desired Impacts. Our Desired Impacts are realized under the assumption that 4C’s Planned Actions eventually contribute to the four major Long-Term Outcomes: the significant spread of the environmentally beneficial coffee farming, eradication of child labor and empowerment of marginalized worker groups, substantial improvement of quality of life for workers regarding their rights, health, and wages as well as increased coffee income and improved market access sustaining farmer livelihoods and farm investments.

Intermediate Outcomes and Direct Results demonstrate, what 4C needs to achieve to precondition the Long-Term Outcomes. Planned Actions at the base of the 4C ToC represent approaches and activities 4C currently undertakes to launch and progress along the impact pathways.

Multiple impact pathways can be recognized on the visual map of the 4C ToC (see Table 1). Let us walk along one of them. 4C acting to strengthen the position of smallholders through its inclusive approach will directly result in the integration of smallholders into 4C certification and enhanced capacity building among them, which in turn will lead to the implementation of better agricultural practices, leading to increased productivity as well as soil and water conservation. 4C believes that these Intermediate Outcomes are needed for the Long-Term Outcomes, such as environmentally beneficial coffee farming and increased coffee income, to come true.

As a Planned Action can be a starting point for several impact pathways which then branch out in the middle, as various results and outcomes can also be pre-conditions to multiple elements of the following stages, a decision was taken not to pre-select these pathways during the visual mapping of the 4C ToC to enable better readability as well as leave room for creativity and hidden pathways 4C and its stakeholders might discover later.

4C is aware that during its path to the achievement of the Desired Impacts, it can face unexpected barriers and/or contribute to certain unintended effects. For instance, one pitfall may be a lack of external resources to implement sustainability solutions, despite the successful step of raising awareness and increasing coffee stakeholders’ engagement with the 4C certification system. As for the unintended effects, these may result in trade-offs, e.g., high compliance cost of adopting good agricultural practices and restraining from cutting forests to expand the available land for coffee cultivation might lead to a decrease in net farmer income in the short-term increasing the risk of farmer’s decision to opt out of the system. With regular assessments of the impacts of our actions, 4C intends to counteract and contain the unintended effects, turning them into new possibilities.

With everything said above, 4C will not limit the use of its ToC to its primary purpose of monitoring and evaluation, but also in its strategic planning and as a basis for learning.

<table>
<thead>
<tr>
<th>Desired Impact</th>
<th>Environmental: nature is protected, and resources are preserved</th>
<th>Social: human and labor rights are secured for farmers and workers involved</th>
<th>Economic: efficient coffee production and transparent supply chains ensure sustainable income for producers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-term Outcomes</td>
<td>Environmentally beneficial coffee farming is a norm</td>
<td>Child labor is eradicated, and marginalized worker groups are empowered</td>
<td>Quality of life for workers is significantly improved regarding their rights, health, and wages</td>
</tr>
<tr>
<td>Intermediate Outcomes</td>
<td>4C Units conform with the most progressive requirements for conservation of biodiversity, soil, and water</td>
<td>High-quality pest and waste management is implemented</td>
<td>Enhanced efficiency of coffee production with proactive risk management and due diligence procedures in place</td>
</tr>
<tr>
<td>Direct Results</td>
<td>Implementation of sustainable coffee farming practices on the ground is supported</td>
<td>Smallholders are integrated and capacity building takes place</td>
<td>Competence of certification bodies and quality of auditing procedures are increased</td>
</tr>
<tr>
<td>Planned Actions</td>
<td>Implement transparent certification of sustainable coffee farming practices</td>
<td>Strengthen the position of smallholders: through an inclusive approach and pilot projects for solving local problems</td>
<td>Incorporate innovative tools for risk assessment, land use change, and GHG emission monitoring</td>
</tr>
</tbody>
</table>
6.5 NEW 4C

2018 until 2020 have been years of change for the 4C System. Several measures have been implemented to further strengthen 4C as a credible and reliable partner of the coffee sector. The 4C System, which was previously considered a verification scheme, has been transformed into a credible and robust certification system, with comprehensive sustainability requirements to meet the high demands of customers while at the same time not losing its inclusive approach to have the greatest impact where it is most needed. 4C adjusted the certification procedure giving more responsibility to Certification Bodies and revised corresponding documents. First and foremost the 4C Code of Conduct with its new audit report template, the System Regulations and Certification Body Regulations, which are available at the 4C website and 4C portal for 4C System users.

The 4C traffic light system has been abandoned and replaced by a robust checklist, requiring a continuous improvement process over time. Furthermore, the sample size to be checked during the certification audit has been adjusted, taking also into account a specific risk factor. These adjustments aim to increase the robustness, integrity and credibility of the 4C System.

Innovative technologies have been implemented to facilitate risk assessments and to detect land use change. 4C uses the latest remote sensing technologies and tools to support objective risk assessments and verify compliance with land use change criteria. In 2020, it has become a mandatory approach before any 4C audit, aiming at an objective analysis of the level of risk in the coffee sourcing areas. Another new tool is the 4C Classified Chemicals Tool, which enables users to check if substances used in a certain property, or group of coffee farms, are prohibited by the 4C certification system or need to be phased out within a certain period. It will also present which ones are banned in the respective country of application.

The 4C portal has been extended to mirror the new workflow and further streamline the certification process, providing transparency to all parties involved. An example is the launched new Business Partner Map (BPM)\textsuperscript{a} template which includes structural changes to its use and objectives. With its upload to the 4C portal, the user receives immediate feedback on the consistency of data, analysis of parameters, and the respective automatized diagrams of the commercial and physical flow of coffee within the producing group. An interactive map is generated based on the geo-coordinates of all coffee producers, showing possible risks to environmental breaches in the area.

4C has also launched a new website which presents itself in an entirely revised design, allowing a quicker, better and more user-friendly navigation. 4C is further working on impact assessments and delivering metrics to stakeholders.

To be closer to the implementers of 4C, 4C has strengthened its presence in coffee-producing countries through its extensive training program and regional stakeholder conferences to be in a continuous exchange with relevant system users and to learn and improve our system and processes continuously.

4C is constantly striving for more effective and innovative solutions that can better serve system users' needs. Hence, 4C will continue its improvement process by listening to the requirements of key accounts in the markets, 4C Units, supply chain operators, auditors and other stakeholders interested in the 4C certification scheme.

\textsuperscript{a} The Business Partner Map (BPM) is a list of all coffee producers which are part of a 4C Unit (a coffee producing group), as well as their individual area and production capacities. It also includes the processing mills, warehouses, and traders involved in that specific supply chain.
6.6 THE 4C CODE OF CONDUCT

4C is committed to the environmentally, socially and economically sustainable production of coffee, which implies specific certification requirements. The sustainability criteria are manifested in the 4C Code of Conduct and comprise principles across the economic, social and environmental dimensions. These principles are based on good agricultural and management practices as well as international conventions and recognized guidelines accepted in the coffee sector which have to be complied with before applying for 4C certification.

In 2020 the 4C Code of Conduct v.2.3 has been revised based on the feedback and information received from our stakeholders during previous stakeholder meetings, written and verbal information received, as well as the online public consultation process and was published on 1st July 2020.

Each principle of the 4C Code of Conduct consists of several criteria, categorized as major and minor check-points, depending on the compliance level a 4C Unit finds itself in. In total there are three compliance levels in which minor check-points become major check-points, hence the criteria that need to be complied with increase.

To receive a 4C certificate, which confirms the compliance with the 4C requirements and enables the certificate holder to sell 4C certified coffee, the 4C Unit must comply with all major check-points of the respective compliance level.

The 4C Code of Conduct represents the first common effort by the coffee industry to tackle sustainability issues together with a large number of farmers. It was created to:

- provide security to European roasters, that the originated green coffee beans from the different producing regions are free of undesirable sustainability footprints,
- offer coffee producing regions a set of core sustainability criteria:
  - a. for improving environmental conditions and livelihoods,
  - b. for supporting sustainable coffee production and sourcing,
  - c. for mainstreaming sustainability,
- actively promote sustainability standards and initiatives in the market to create supply and demand of verified and certified coffee,
- bring the industry together to invest in technical assistance, to contribute to a healthy coffee market that benefits all the participants in the chain.

4C continues to pursue these important goals today and will keep doing so in the future to enable and secure genuine sustainability in the coffee sector for generations to come.
ECONOMIC DIMENSION

- Internal Management System
- Ethical Business Practices
- Compliance with Local Laws
- Profitability and Long-Term Productivity
- Compliance of Subcontractors with 4C Requirements
- Access to Trainings
- Access to Technical Assistance
- Transparent Pricing Mechanisms
- Traceability

SOCIAL DIMENSION

- No Forced Eviction
- No Forced and Bonded Labor
- No Child Labor
- No Discrimination
- No Harassment or Abuse
- No Hazardous Work for Impaired Workers
- Freedom of Association
- Consultation on Working Conditions
- Fair Working Conditions
- Complaint Handling Mechanisms
- Action Against Discrimination and Harassment
- Fair Labor Contracts
- Minimum Wage
- Equal Benefits
- Impact on Surrounding Communities
- Adequate Housing
- Sanitation Facilities and Equipment
- Potable Water
- Health and Safety Program
- Protective Clothing and Equipment
- Food Security

ENVIRONMENTAL DIMENSION

- No Deforestation
- No GMO
- No Prohibited Pesticides
- Biodiversity Conservation and Restoration
- Climate Change Mitigation
- Diminished Use of Pesticides
- Adequate Application of Pesticides
- Reduced and Renewable Energy Consumption
- Soil Conservation
- Soil Fertility
- Water Source Conservation
- Respected Water Use Rights
- Water Use Efficiency
- Wastewater Management
- Waste Management
6.7 TRACEABILITY

According to the International Organization for Standardization (ISO), the term traceability describes the ability to identify and trace the origin, distribution, location and application of products and materials through supply chains. Traceability enables following the flow of coffee throughout the supply chain and guarantees the integrity of sustainability statements, ensuring among others that the volume of 4C certified coffee sold does not exceed the 4C certified coffee volume purchased.

Traceability in 4C means that 4C certified coffee must be tracked and traced back and forth through all steps of the coffee supply chain, from the producer up to the Final Buyer. Within the 4C Unit, only physical segregation is allowed. This ensures that 4C certified and non-4C certified coffee is kept physically separated. Full traceability is verified during the 4C audits. For instance, records of incoming, outgoing and stored 4C coffee must be available at each Business Partner of the 4C Unit. Bookkeeping is required to confirm that the outgoing 4C certified coffee volume is equal to or less than the incoming 4C certified coffee volume.

Outside of 4C Units, traceability of the downstream supply chain is upheld with the help of annual mandatory buyer reporting of 4C certified coffee volumes via the 4C Portal. In addition to that, Intermediary and Final Buyers of 4C certified coffee must have records available which indicate the date and quantities of incoming and outgoing 4C certified coffee volumes, including the names of the corresponding supplier and recipient, as they might be subject to verification within the framework of the 4C Integrity Program (see 6.14 4C Integrity Program). A chain of custody 4C certification for Intermediary and Final Buyers can also be done on a voluntary basis.

Figure 4: Traceability of 4C certified coffee throughout the coffee supply chain. Example of a supply chain common for Latin America. Other possibilities exist, e.g., wet milling in major 4C certified Robusta coffee origins in Vietnam.
6.8 IMPROVEMENTS THROUGH INNOVATIONS

Innovation is a cornerstone of resilience and sustainable growth. Pioneering and efficiently implementing innovative solutions for the coffee sector is a distinguishable signature of 4C. 4C is constantly working on the development and integration of modern technologies into the system to improve the quality of and digitize existing audit certification procedures, achieving better results in a more efficient and, where possible, less cost-intensive way.

Remote sensing-based risk assessment

Risk assessment is integral to the 4C certification system and consists of the identification, evaluation and classification of risks. It is a crucial part of every audit and must be conducted to determine the risk of non-conformities with the 4C requirements.

To enable secure and objective risk assessment, 4C fully integrated a remote sensing-based tool powered by GRAS into the 4C certification system. It provides secure solutions to prove compliance with sustainability requirements, to implement no-deforestation strategies in a transparent and verifiable way, to manage sustainability risks, to support mapping of supply chains and to facilitate certification.

Within the 4C system, the risk of non-conformities must be assessed using this remote sensing-based tool which allows for a meaningful and well-balanced result for the respective region. To offer information on land use change (LUC), ecological and social sustainability, this innovative web tool uses local and national datasets on biodiversity and protected areas, high-resolution remote sensing and GIS technology and data from the latest generation of satellites, as well as data from social indices, such as the Global Hunger Index (GHI), World Governance Indicators (WGI), the Global Slavery Index (GSI), and the Human Development Index (HDI). For instance, with the help of satellite images and vegetation index time series, it is possible to determine the exact time and type of LUC activities within plantation outlines.

![Figure 7. Available local and national datasets on biodiversity and protected areas are used to check overlap with plantation areas or coffee farms - Example of Colombia](image)
This tool allows auditors to assess LUC, biodiversity, carbon stock, and social aspects, and to verify the risks related to compliance with 4C criteria. The use of this tool is mandatory within the 4C standard. On the farm and plantation level, the assessment focuses on a detailed land use change verification. Studying the Enhanced Vegetation Index (EVI) time series from 2000 to the present, one can distinguish different types of green cover, understand the land use history, and, most importantly, determine the type and exact point in time of the detected LUC.

As a result of automatized analysis, the auditor receives a score, a so-called GRAS index of the sourcing area valid for the producers of the 4C Units. This score is obtained by merging relevant data on LUC, biodiversity, carbon stock, and social indices by region. The GRAS index defines the predominant risk level (low, medium, or high) which must be applied. The level of risk in its turn determines the sample size for the upcoming on-site audit, from 0.5 times the square root to 1.5 times the square root of the farmers registered in the 4C Unit, accordingly. Apart from that, the intensity and focus of the audit are adjusted based on the identified hot spots.
4C smallholder and tracking app

More than 90% of the 4C certified coffee producers are smallholders and 4C is determined to support them in the best way and enable easier data collection and monitoring, necessary both for certification purposes and good business management and accountability.

The Smallholder and Tracking app supports feasible and credible smallholder certification processes by enabling the efficient management, analysis and visualization of smallholder data. For instance, it allows to capture the field’s polygons directly onsite and subsequently upload the collected outlines into the 4C remote sensing-based tool. In the tool, the uploaded data can be visualized and managed and compliance with 4C’s requirement on no cutting of primary forests and destruction of protected areas can automatically be verified for each field.

Traceability is ensured through collecting, monitoring and analyzing the origin and amount of 4C certified coffee per farmer through a QR code system and unique delivery IDs. These are then uploaded into a data management tool by the collector of the coffee, which the dry mill or Managing Entity in charge of the group’s certification can assess and countercheck. Besides, it also serves as a monitoring and control tool to identify where potential deficits exist, e.g. due to low yields or coffee quality issues from certain farmers, and if further training is needed to improve the situation.

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Figure 16. 4C Smallholder and Tracking App
4C classified chemicals tool

An important aim of sustainability certification for farms and plantations is the monitoring of chemicals used and excluding those from production processes that have been identified as hazardous. Within 4C, there are three lists of pesticides (listed as technical names of active ingredients): 4C List of Unacceptable Pesticides, 4C Red Pesticide List and the 4C Yellow Pesticide List.

4C has developed an easy-to-use “classified chemicals” tool that shall help auditors, Managing Entities and coffee farmers to comply with the 4C requirements on the use of pesticides. By entering the CAS 15 number of the respective active ingredient and the country of cultivation, it identifies which chemicals are prohibited or need to be phased out according to the 4C Pesticide Lists and which ones are banned or not approved in the country of application.

The use of chemicals listed in the 4C List of Unacceptable Pesticides is prohibited. The use of chemicals listed in the 4C Red Pesticide List must be phased out after a period of three years after initial certification. The use of chemicals listed in the 4C Yellow Pesticide List shall be minimized and phased out, if possible. The principles and field practices recommended by Integrated Pest Management (IPM) are crucial to enabling the reduction or even elimination of some listed pesticides. So, dissemination and correct implementation of the IPM practices are key in planning and managing pesticide use.

Automatization of compliance checks via the 4C portal

The Business Partner Map (BPM) is an Excel tool to define and keep track of changes within a 4C Unit by listing its Business Partners (BPs), meaning coffee producers, processing mills, warehouses, and traders. It covers all actors in the internal supply chain of the respective 4C Unit up until the point when green coffee is sold and/or exported by the Managing Entity which is in charge of this 4C Unit. The data collection encompasses the name, national identification number, gender, production capacity, geo-coordinates, other functions of each Business Partner, and their business relationships with each other.

After filling in the BPM Excel template, users can upload it to the 4C Portal and receive an immediate and extensive analysis. The generated report covers a summary of imported data, identified errors or inconsistencies, and an interactive map based on the entered geo-coordinates. Business relationships between BPs are used to draw diagrams for both the physical and commercial coffee flow of the 4C Unit’s supply chain. The completeness and correctness of the BPM are checked during the audit procedure and the errors have to be corrected before a certificate is issued. For example, multiple entries with the same national identification number but different names are not possible, unusually low or high yields are highlighted, national identification numbers are compared and matched with pre-defined and country-specific formats in the 4C database, and more.

An automatic procedure is established to identify employers involved in activities characterized as work analogous to slavery i.e. forced labor, debt bondage, degrading conditions. At the moment, this procedure is aimed primarily at the Brazilian coffee sector, based on the available “Cadastro de Empregadores” or “Dirty List” of contemporary slavery. The “Dirty List” is a database created by the Brazilian government in November 2003 which is regularly updated by the Ministry of Economy. Once a BPM is uploaded to the 4C portal, its records are compared with entries of the “Dirty List”, using farmer names and national identification numbers as identifiers. The comparison is intentionally very strict and also catches identical names or national identification numbers with slightly different spellings or formats. In case a Managing Entity or an auditor identifies that one of the producers is listed, immediate investigations have to take place to verify the accusations on the ground. 4C is further looking for additional official information sources that can support auditors in verifying social risks.

Furthermore, calculations on the turnover rate of coffee producers leaving and joining a 4C Unit are presented to allow for a better judgment of whether or not an additional audit is required. An interactive map displays the geographic distribution of coffee producers and enables the identification of obvious outliers and proximity of producers to sensitive, risk, or no-go areas, in terms of LUC and biodiversity.

The combination of using an adjustable user-friendly Excel sheet and a web-based tool enables 4C to develop and incorporate additional features over time without necessarily requiring new template versions. The analysis tool on the 4C Portal establishes an objective and time-efficient control of the correctness and completeness of the BPM through auditors to an extent, which would otherwise be considered unfeasible.

15. CAS is a unique numerical identifier assigned by the Chemical Abstracts Service (CAS) to every chemical substance described in the open scientific literature. CAS numbers must be used to identify the correct substance.
6.9 DUE DILIGENCE REQUIREMENTS

Companies experience increasing societal and governmental pressure to strengthen social and environmental due diligence across their global supply chains. This is an important step towards achieving the UN Sustainable Development Goals and ensuring a healthy and prosperous future for people and the planet. 4C certification in its turn presents a viable tool for identification and mitigation of risks in coffee supply chains, enabling roasters and brand owners to take a proactive approach, detect and verifiably close human rights and environmental gaps in their supply chains.

According to the OECD and FAO Guidance for Responsible Agricultural Supply Chains, “due diligence is understood as the process through which enterprises can identify, access, mitigate, prevent and account for how they address the actual and potential adverse impacts of their activities as an integral part of business decision-making and risk management systems” (OECD/FAO 2016). Today global society experiences the rise of multiple due diligence regulations around the world. These include the UK and Australian Modern Slavery Acts, the French Duty of Vigilance Law, the Dutch Child Labor Due Diligence Law, and the German Supply Chain Act. Further laws and legal initiatives are being discussed in countries such as Switzerland and Canada. The EU is also working on a cross-sectoral European due diligence solution within the frame of the EU Green Deal. Sector-specific requirements, such as the EU Timber Regulation, are already in place.

The regulations are commonly in line with the due diligence principles, as stated in the OECD due diligence framework: “identify, prevent, monitor and mitigate” the negative impacts in companies’ supply chains (OECD 2018). Some regulations directly refer to certification as a useful tool for supply chain due diligence, e.g. EU Legal Framework to Hold and Reverse EU Driven Global Deforestation and the German Supply Chain Act.

In a nutshell, due diligence requirements include risk assessment, prevention and mitigation, monitoring, reporting, and enforcement. As an independent third-party certification with strict criteria, 4C represents a reliable instrument to support companies in complying with a number of due diligence requirements.

Here are a few examples of how 4C enables effective supply chain due diligence. To begin with risk management: 4C provides access to verified information on social and environmental hot-spots and enables early risk identification. Robust risk assessment procedures and tools are in place, including independent third-party audits and digital technologies based on local and national datasets and satellite images. Further on, risks are carefully monitored, and improvement plans are continuously implemented to strengthen sustainability on the ground and prevent any future violations of human rights and other types of non-conformities. Beyond that, 4C also facilitates the provision of remediation through its sustainability projects. Last but not least, 4C provides companies with credible evidence on sustainability and progress achieved in their supply chains, as well as project reports and case studies.

4C is a ready-to-use toolbox to assess and address supply chain risks. 4C creates shareholder and consumer value for companies, enabling responsible sourcing, transparent reporting and credible communication. It also provides regulatory value, helping to meet forthcoming legal due diligence requirements.
6.10 4C CARBON FOOTPRINT ADD-ON

Agriculture is one of the main greenhouse gas (GHG) emitters, contributing to climate change. Coffee production is no exception here. Deforestation and land use change are the major sources of coffee GHG emissions. Apart from that, a large share stems from coffee cultivation and production systems: intensive fertilizer and pesticide use, energy-consuming machines, and inefficient wastewater management among others. 4C is determined to thoroughly address the challenge of reducing GHG emissions, supporting its system users, partners, and other stakeholders on their journey towards carbon neutrality. For this reason, 4C has expanded its core certification with a voluntary 4C Carbon Footprint Add-On.

Calculating GHG emissions is the first step to understanding and quantifying the adverse impact coffee production has on the environment. 4C takes a comprehensive approach and starts with supply chain mapping and considering all GHG-relevant inputs, such as fertilizer, pesticides, process water, diesel, and electricity. Per individual request, it is also possible to go further and cover the roasting process.

An updatable, transparent, and user-friendly baseline calculator is then used to determine the GHG emissions volume within the defined supply chain boundaries. GHG calculations are conducted based on a range of existing methodologies and standards, such as the ISO Standard, GHG protocol, GRI, and IPCC.

The information received forms a basis for a scientific and reliable evaluation of the greatest reduction potential, identification of impactful measures to curb the emissions and monitor progress in the long term.

Feasible improvement measures to reduce GHG emissions can include cutting down on fertilizer and pesticides and using acceptable alternatives, improving water treatment, and increasing water and energy efficiency. However, even if emissions are reduced to the lowest degree possible, some unavoidable emissions are likely to be left. Here, identifying and implementing in- and offsetting measures is particularly important. For 4C, solutions within the coffee supply chains come first. For instance, 4C has developed an additional pilot project to increase soil health and implement soil conservation practices, increasing the potential of soils to act as carbon sinks.

Finally, consequent and third-party monitoring and certification of the progress are key. The information on the size of the carbon footprint, improvement measures, and progress flows into the 4C Carbon Footprint Add-On. This add-on highlights verified efforts of coffee farmers and companies sourcing from them to minimize the carbon footprint of their products. The farmers also benefit from implementing good agricultural practices, as well as increased resilience of their coffee farms and their economic well-being, connected to reduced input costs and the opportunity to sell a climate-friendly product at a premium price. Every interested stakeholder is invited to take a proactive approach towards their carbon footprint with 4C, investing in and supplying climate friendly coffee.
6.11 TRAINING AND CAPACITY BUILDING

Trainings play a crucial role in the quality and risk management at 4C as they are designed to safeguard correct and complete audit performances by the CBs and proper implementation of the 4C requirements by the system users.

In 2018, 4C started a new series of in-person trainings for its users and auditors, covering all aspects of the 4C System. This first training round, which retieved 2018, was held in six countries: Colombia, Brazil, Vietnam, Indonesia, Kenya and Mexico. In that year, more than 210 participants had the opportunity to learn about the basics of the 4C System and understand the innovations that were being incorporated.

Those that were not able to participate in the 2018 trainings had the chance to do so again in 2019, where another six trainings have were held in-person in the following countries in: Colombia, Ivory Coast, Mexico, Brazil and two in Vietnam, with a total of 129 participants.

In 2020, 4C offered several introductory webinars, reflecting the main changes in the 4C System, in particular connected to the revision of the critical system documents. 4C further developed and conducted online modular three-day trainings, available in English, Spanish, Portuguese and Vietnamese languages. In total, 123 participants joined these trainings which entailed a crucial update on the latest revision of the 4C Code of Conduct and guided the participants through the certification process, ensuring better understanding and implementation of the new audit requirements and procedures. The trainings also covered the increasingly important chain of custody certification.

4C trainings are a prerequisite for auditors before they may conduct a 4C audit and will continue to be offered on a regular basis in the future. Apart from the online trainings, 4C planned several online seminar series to promote sustainability dialogue in the coffee sector in 2021. These were bi-weekly series, conducted in English, Spanish, Portuguese and Vietnamese languages.

Starting from 2022, 4C plans to resume in-person conferences, including the 4C Global Sustainability Conference and the 4C Regional Stakeholder Conferences, while also offering hybrid and online events and trainings, where applicable.

Figure 12. 4C trainings and events around the globe, 2018-2019.
July 2020
Introduction to the Main Changes in the 4C System

July - October 2020
4C Online Trainings in English, Spanish, Portuguese and Vietnamese

September 2020
Web training on Biodiversity in Agriculture and in Coffee Cultivation

September - November 2020
4C Online Seminar Series "Sustainable Coffee Days"
6.12 INTEGRITY PROGRAM

4C has expanded its Integrity Program to ensure the integrity and credibility of the 4C System. Up to now, 4C has conducted integrity assessments at 4C Units which were suspected to have non-conformities to 4C requirements, especially on violations to 4C requirements concerning unacceptable practices. 4C intensified its Integrity Program to ensure a consistent, objective and reliable audit and certification process by all CBs cooperating with 4C on a global basis and to enable closer monitoring of CBs’ auditing and certification activities and companies’ compliance with 4C requirements. This innovation is an essential part of the continuous improvement process of the system.

The 4C Integrity Program supports the quality and risk management at 4C and provides valuable feedback to 4C regarding the implementation of the standard and its verification.

The 4C Integrity Program consists of monitoring and assessments of 4C System users, including CBs. 4C integrity assessments are planned randomly or on a risk basis after risk evaluations, complaints, or reports of non-conformity or fraud. The assessments are conducted by 4C integrity auditors and can take place in any country where 4C System users and CBs are located. The 4C integrity auditors must be independent and free of any conflicts of interest. They work on behalf of 4C and are not allowed to work for CBs cooperating with 4C at the same time.
Since 2018, it is possible to use the 4C logo on-pack, displaying the commitment of companies' sustainable coffee sourcing practices to their customers. The first two retail series of 4C certified coffee carrying the 4C logo were launched in the Brazilian market.

The cooperatives Cocatrel (Cooperative dos Cafeicultores da Zona de Três Pontas Ltda.) and Cooxupé (Cooperative Regional de Cafeicultores em Guaxupé Ltda.) displayed their commitment to sourcing sustainable coffee beans by using the 4C logo on-pack. On its pack, Melitta also highlights sourcing coffee beans from 4C certified farms as their contribution to improving the living conditions of coffee farmers and increasing the protection of the environment.

Currently 4C witnesses an increasing interest of coffee brand owners: for example, in August 2020, Ajinomoto AGF launched a new packaging with a 4C logo. More recently, Gevalia, a traditional brand owned by Jacobs Douwe Egberts (JDE) with a 150-year history and the largest coffee roastery in Scandinavia, announced that it will include information on sourcing 4C certified coffee on-pack to enable more visibility and increase awareness of its contribution to supporting sustainable farming. “JDE is proud of the long-standing partnership we have with 4C. This collaboration with Gevalia demonstrates our commitment to responsible sourcing and supporting sustainable coffee farming,” says Nadia Hoarau-Mwaura, Sustainability Director at Jacobs Douwe Egberts.

4C is pleased to support these companies in their sustainability efforts and hopes that responsible sourcing trends will increase in the coming years on a global scale.
6.14 BENCHMARKS, RECOGNITIONS

4C at ITC Standards Map

The 4C Code of Conduct has gone through an evaluation by the International Trade Center (ITC). The ITC overview of the number of requirements on environmental, social, management, quality, and ethics shows the comprehensiveness of the 4C standard. 4C has the highest number of social, management, quality, and ethics requirements and the second-highest number of environmental requirements when compared with other sustainability standards used in the coffee sector.

The update also reiterates that 4C is independently conducted by third-party auditors to ensure compliance in the economic, social, and environmental dimensions for coffee production and processing, in order to establish credible sustainable coffee supply chains.

ITC, established in 1964, is the joint agency for the World Trade Organization and the United Nations. One of the programs of ITC is to develop and maintain the so-called Standard Map, which provides verified and transparent information on more than 250 voluntary sustainability standards and other similar initiatives, covering issues ranging from environmental protection, workers and labor rights, economic development, quality and food safety, all the way to business ethics.

SAI Silver Compliance

In 2018, 4C has undergone a benchmarking process by the Sustainable Agriculture Initiative (SAI) Platform, where 4C achieved “Silver” equivalence with SAI Platform’s Farm Sustainability Assessment (FSA) tool.

Following the interest expressed by some SAI Platform member companies, the criteria of the 4C standard were submitted for benchmarking against the FSA criteria, which has shown once again that the 4C standard measures up as a reliable framework to implement sustainable agricultural practices throughout the coffee supply chain. Through this recognition, 4C is now supported by a universal reference, accepted by a broad range of international food and drink companies. By facilitating the recognition of the standard at the level of different market actors with their carrying social codes and expectations, the benchmark broadens market accessibility for 4C certified operations.

SAI is a platform of the global food and beverage industry aiming at implementing secure agricultural supply chains and protecting the earth’s resources through the widespread adoption of sustainable practices. At the time being, the platform has over 90 members, many of them being globally leading brand owners of the food and drink industry and retailers.
4C is a member of the Global Coffee Platform (GCP). The GCP is a multi-stakeholder sustainability platform that aims to create an enabling environment for members (producers, international roasters, governments, traders, donors, and NGOs) to collectively define a shared vision, act on national priorities, closely cooperate with governments, improve the effectiveness of sustainability programs, and contribute to greater impact at farm level. Additionally, 4C is a member of the Technical Committee of GCP and contributes with technical input from a certification perspective to processes such as standard development and/or revision and interpretation.

4C has been accepted as a member of the German Coffee Association (Deutscher Kaffeeverband) in May 2019. The German Coffee Association represents the interests of the German coffee sector and counts more than 250 members. The overarching goals of the association are the achievement of positive conditions for the coffee industry, the competent support of its members and the promotion of a positive image for coffee in Germany.

In July 2019, 4C has become a partner in the Sustainable Coffee Challenge (SCC) and supports the Challenge’s agenda by committing to increase deforestation-free and biodiversity protected coffee supply chains. This confirms 4C’s commitment to supporting initiatives to mitigate the impact of climate change. The Sustainable Coffee Challenge is a collaborative effort of companies, governments, NGOs, research institutions and others to transition the coffee sector to be fully sustainable. Challenge partners are urgently working together to increase transparency, align around a common vision for sustainability and collaborate to accelerate progress towards those goals. The Challenge is facilitated by Conservation International, with the agenda and actions led by Challenge partners. Together, these change makers work to find solutions for the coffee community.
7. How We Create Impact

4C is committed to the environmentally, socially and economically sustainable production of coffee, which implies specific certification requirements. The sustainability criteria are manifested in the 4C Code of Conduct and comprise 12 principles across the economic, social and environmental dimensions. These principles are based on good agricultural and management practices as well as international conventions and recognized guidelines accepted in the coffee sector.

Each of the 12 principles consists of several criteria and checkpoints, categorized as major and minor checkpoints. To receive a 4C certificate, which confirms compliance with the 4C requirements and enables the certificate holder to sell 4C certified coffee, the 4C Unit must comply with all major checkpoints. The number of minor checkpoints becoming major checkpoints increases with each certification period.

4C puts a high emphasis on the approach of continuous improvement, increasing the implementation of sustainable agricultural practices over time. During the audit, areas of improvement are identified and recorded in an Improvement Plan containing actions with concrete goals and deadlines. Each action is related to a principle of the 4C Code of Conduct and therefore connected to one of the three dimensions (economic, social and environmental). The Improvement Plan is part of the document package submitted by the Certification Body to 4C at the end of an audit together with the audit report and all other related documents.

The implementation of the defined actions in the Improvement Plan is confirmed either through an additional on-site audit or a desk audit, depending on each case and on the Certification Body’s recommendations. An updated Improvement Plan is always required for the Annual Updates, which are mandatory desk audits during the three-year validity period of 4C certificates. In addition to the Annual Updates, a 4C Unit might be subject to surveillance and integrity audits during the three-year validity period.
no child labor and ensured protection of children's rights

fair and safe working conditions

conservation of soil and water resources

farmer capacity building and technical assistance

promotion of gender equality

implementation of good agricultural practices

no deforestation and ensured protection of biodiversity

climate change mitigation and adaptation

increased farm profitability and productivity

existence of food security

use of renewable energy

impact on surrounding communities

best practices in waste management

enhanced transparency through traceability
7.1 4C IN NUMBERS

4C Units worldwide:

As of December 2021, a total of 175 4C Units had valid a 4C certificate in the following countries:

<table>
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<th>ASIA</th>
<th>LATIN AMERICA</th>
<th>AFRICA</th>
<th>OCEANIA</th>
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<tr>
<td>China</td>
<td>Brazil</td>
<td>Rwanda</td>
<td>Papua New Guinea</td>
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<tr>
<td>India</td>
<td>Colombia</td>
<td>Ivory Coast</td>
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<td>Indonesia</td>
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With 77 4C Units certified, Vietnam is taking the lead, followed by Brazil, Colombia, and Indonesia, all of them with 12 certified 4C units or more.

![Map showing 4C Units certified per country.](image)

Since the start of its operation in 2007, over 1,320 licenses and certificates have been issued in the 4C system. Until 2018, 4C was a verification system issuing licenses and since then, 4C is a certification system issuing certificates.
About 1.6 million metric tons of 4C certified green coffee beans, or 27 million 60kg bags, have been produced in 2021, covering an area of almost 800,000 hectares. Most of the 4C certified coffee produced originated from Latin America, with more than 900,000 metric tons (see Figure 17), whereas countrywise Vietnam produced the largest amount of 4C certified coffee, closely followed by Brazil and Colombia (see Figure 18).
4C certified coffee demand

In 2019, final buyers/roasters reported purchases of almost 600,000 metric tons of 4C certified coffee (equivalent to 10 million 60 kg bags), which translates into an increase in purchases of more than 11% in comparison to the previous year. In 2020, the purchases of 4C certified coffee amounted to more than 680,000 metric tons or over 11 million 60 kg bags. This number is historically high and represents an important milestone for the 4C standard. Compared to the previous year, the reported purchases increased by 14.6%.

This accomplishment also belongs not only to 4C, but also to the 4C certified producers who practice and perfect sustainability of their farms and facilities over time; the certification bodies cooperating with 4C who tirelessly conduct sustainability audits and help to improve the sustainability performance; and last but not least every roaster, brand owner, and consumer who decided in favor of responsibly produced certified coffee beans, instead of conventional ones.

4C is very pleased to see the growth in demand for sustainable coffee, the trust in credibility and reliability of 4C and anticipates this trend to continue in next reporting period.

![Graph showing reported purchases of 4C certified coffee since 2012](image)

Figure 13: Reported purchases of 4C certified coffee since 2012
Whereas the total amount of producers involved in 4C certification decreased, the number of smallholder farmers involved in 4C certified coffee production steadily increased over the past years. As of December 2021, almost 320,000 coffee farmers are covered under the 4C certification system (see Figure 20), of which 94% are smallholder farmers (using a count of farmers with a total farm area of less than 5 ha17).

The countries with the most 4C certified coffee producers are Colombia, followed by Vietnam, Rwanda, and Ivory Coast (see Figure 20). The share of smallholders is very high in each country and in some they are even the majority. An exception here is Brazil, which has over 5,980 4C certified producers, out of which one third are smallholders.

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17. This definition of smallholder was used until 30 June 2020 and was replaced by a revised definition on 1st July 2020. For further information on the revised smallholder definition and any other term used in the current report, please consult the 4C Glossary available on the 4C website.
Workers of 4C Units

4C Units employ more than 850,000 workers, of which the majority, or over 760,000, are temporary workers. Temporary workers are usually employed during the harvest season, when more labor is required than throughout the rest of the year.

The proportion of female coffee farmers under 4C varies between 8 and 27%, depending on the region, with men still being the majority of the producers certified by 4C (see Figure 21).

![Pie charts showing the proportion of female and male workers, and temporary and permanent workers by region.](image)

Figure 21. The proportion between female and male coffee producers and between permanent and temporary workers per continent as of December 2020.
Figure 22: The proportion of female and male coffee producers in the top 10 countries with regard to the number of producers as of December 2020.
4C certified arabica vs robusta

The global average proportion of 4C certified arabica is almost equal to the proportion of 4C certified robusta with 45% and 55% respectively. Yet the picture is very different for individual countries, as presented by Figure 23.

![Bar chart showing the proportion of 4C certified robusta and arabica coffee among top 5 countries producing 4C certified coffee as of December 2020.](image)

**Figure 23:** The proportion of 4C certified robusta and arabica coffee among top 5 countries producing 4C certified coffee as of December 2020

4C Units’ areas for improvement

In order to allow for a continuous improvement among the 4C Unit’s coffee producers and service providers, Improvement Plans need to be set up by the Managing Entity. The Improvement Plans address areas for improvement which have been identified during internal self-assessments and the certification audit and which need to be worked on within the three-year validity period of a 4C certificate.

The progress of the improvements made is monitored by 4C on an annual basis via the Annual Updates and may be subject to a surveillance audit.
Figure 24 provides a summary of the areas for improvement identified most frequently in 2021. The figure shows the percentage of the total audits in 2021 where areas for improvement under each principle of the 4C Code of Conduct were identified during the audits. In the economic dimension, 67% of identified areas for improvements have been recorded under Principle 1.4 (Traceability), which covers availability of clear procedures on the management of traceability and reports on all 4C certified coffee volumes purchased, sold and stored; physical segregation of 4C certified coffee and others. The topic of traceability is followed by Principle 1.1 (Business Management), with a share of 66%, concerning, among others, the development and implementation of Internal Management Systems, which is key to group certification.

The 4C requirements in the social dimension include over 50 individual checkpoints verified by auditors per coffee producer. These refer to the existence of complaint mechanisms; policies to promote farmer and worker well-being; gender equality; risk assessments prior to setting up health and safety programs, etc. In this dimension of sustainability, 61% of identified areas for improvements were found to be under Principle 2.2 (Working Conditions), which covers issues connected to labor contracts, working hours and occupational health and safety measures, whereas 54% under Principle 2.1 (Human and Labor Rights). It is important to highlight that highly critical issues such as child labor, forced labor and discrimination are not part of these statistics, as any of such practices are unacceptable and cannot result in a positive certification decision and therefore cannot be recorded as an area for improvement during the certificate validity timeframe.

Considering the environmental dimension, the most recorded areas for improvement were under Principle 3.2 (Use of Pesticides and Other Hazardous Chemicals) with 54%, covering criteria to promote responsible pesticide use, and Principle 3.1 (Protection of Biodiversity and High Carbon Stock Areas) with 55%, which refers to developing and implementing action plans to protect and restore areas of high biodiversity, as well as implement climate change mitigation and adaptation measures. Similar to the social dimension, the issue of deforestation is not included here, as cutting, destruction and conversion of primary forest is prohibited within the 4C System since 2006. If this unacceptable practice is identified by a risk assessment and/or on-site audit, the producer group cannot be 4C certified.

The individual corrective actions are always defined case by case and deadlines can vary according to the level of effort to implement the respective changes or requirements set by the 4C standard. This applies for all sustainability dimensions. The majority of the 4C Units are already on a positive trajectory towards implementing their corrective action and successfully completing potential recertification at the end of their current certificate validity period.

![Figure 24: Most frequently identified areas for improvement per dimension and principle for initial and recertification audits in 2021](image)

**Figure 24**: Most frequently identified areas for improvement per dimension and principle for initial and recertification audits in 2021

**Important**: Improvement areas and actions are identified with the goal of achieving impact through improved agricultural practices over time - in all three dimensions and the Internal Management System. 4C certified coffee is considered sustainable from the moment of certificate issuance and is based on compliance with the 4C Code of Conduct. The implementation of these improvements is meant to further advance sustainable agricultural practices, is monitored annually and is required for recertification as described above.

18. The revision of the 4C Code of Conduct in July 2020 brought some changes into the criteria and the audit checklist, yet the overarching sustainability principles of the 4C Code of Conduct remained. For the Figures 26 and 27, a translation of the related improvement actions from audits conducted pre-July 2020 to the revised 4C Code of Conduct and list of principles post-July 2020 was applied.

19. Please consult the 4C Code of Conduct 4.0 for more details.
7.2 4C IMPACT SURVEY

7.2.1 Impact Survey for 4C certified Managing Entities of 4C Units

In 2020, 4C conducted an anonymous survey, asking all active Managing Entities of 4C Units to provide their feedback on where they have noticed the biggest positive impact of 4C certification within their 4C Units. A total of 139 responses were received. 25 respondents have been involved in 4C certification for more than nine years. 75 respondents have been with 4C for nine to three years and 39 respondents joined 4C within the last three years. The questions were asked in a way to identify whether the MEs experienced no, low, medium, or high-level positive changes due to 4C certification within the economic, social, and environmental dimensions. The feedback is summarized below.

a) Economic dimension:

In the vast majority of areas of the economic dimension, including traceability, transparent and fair business practices, coffee quality, access to services, gender equality, record keeping of costs and income, productivity, and profitability, a medium level change was experienced within the 4C Units, as confirmed by around 50% of the interviewed. Only access to services and gender equality is slightly falling below, whereas transparent and fair business practices and profitability have seen medium level change according to almost 60% of respondents.

The highest level positive change due to 4C certification has been identified concerning traceability within the 4C Unit, mentioned by around 38% of the MEs. coffee quality (29%) access to services such as fertilizer, equipment, credit, seedlings, and technical assistance (27%) and transparent and fair business practices (25%). MEs mentioned that productivity increased due to training measures with regard to good agricultural practices leading to improved coffee quality and more efficient work.

![Figure 23: 4C Impact Survey. Changes identified due to 4C certification in the Economic dimension]
Thanks to the combination of more efficiency at work, increased quality and reduced production costs, we observed higher profitability and resilience of 4C certified producers. We estimate a profitability increase of around 30% to 40% for technology-intensive properties.

“We can see relevant changes in the way coffee is grown: the documentation is more organized, environmental management has been reviewed and improved. In general, the 4C standard helps the producer to find a path to good agricultural practices.”

“After joining the 4C certification, our company observed an improvement of its reputation on the market and became more competitive in production and sales. Access to more technical information, higher transparency in business, and more clear traceability of products... At the same time, the quality of coffee has also improved.”
a) Social dimension:

More than 30% of all MEs have seen high-level positive change due to 4C certification in all of the topics of the social dimension, which include occupational health and safety, working conditions with regard to wages and working hours, freedom of association and collective bargaining, school education of minors, child labor, grievance mechanisms and equal rights and treatment of workers.

In particular, concerning the occupational health and safety standards within the farms, 83% of all respondents have noticed a positive impact of 4C certification, rating it as a high or medium level change. Apart from that, 74% of MEs acknowledged that 4C certification has contributed to the reduction of child labor, with a medium to a high level of positive change.

![Bar chart showing changes in social dimension topics due to 4C certification.](image)

Figure 26: 4C Impact Survey: Changes identified due to 4C certification in the Social dimension.
We achieved a good adherence in the use of the personal protective equipment, which originally was practically non-existent.”

The contribution of certifications such as 4C has substantially improved the working conditions of workers by supporting equal rights, fair treatment, and giving them a voice to be heard. I believe that much has been achieved in the area of child labor as well.”

After joining the 4C certification, our company has improved its social security policies including the aspects of working time, working conditions, and safety in labor and occupational health.”
c) Environmental dimension:

According to the current survey, the environmental dimension has achieved the highest impact in comparison with the other dimensions with regard to medium and high-level positive change due to 4C certification. The environmental dimension entails the topics of use of energy, waste management, wastewater management, water conservation, soil fertility, soil conservation, use and handling of pesticides, and biodiversity.

The MEs have attributed the positive change mainly to the education of the farmers and access to information regarding resource use such as soil, water, and the management of waste, among others. The highest level change has been noticed with regard to the use and handling of pesticides, where 85% of the respondents identified a medium to high level positive change. In addition to that, MEs reported multiple high or medium level improvements in the areas of waste management (78%), water conservation (78%), soil conservation (77%), soil fertility (75%), as well as wastewater management (73%).

![Bar chart showing changes in various topics](image_url)

*Figure 27: 4C Impact Survey: Changes identified due to 4C certification in the Environmental dimension*
After joining the 4C system, more than 50% of farmers stopped keeping pesticides at home and started using fewer pesticides, applying more compost, planting more shade trees, and keeping moderate land cover to avoid soil erosion instead. The amount of water used for irrigation was reduced by up to 50%. Moreover, 80% of farmers are now sunlight drying coffee to save energy and improve coffee quality.”

“Farms are making continuous efforts at educating their residents on waste segregation and management. More awareness is created on the farms by the proprietors themselves and the Managing Entity concerning safe practices of pesticide use and handling.”

“Important work has been done on the recovery of areas to strengthen biodiversity, practices to conserve soil and water were introduced, and the systems for the treatment of gray water, honey water, classification of solid waste were designed. We keep seeking further reduction of chemical inputs and explore the use of solar energy, both undoubtedly very important to achieve more sustainability.”
7.2 4C IMPACT SURVEY

7.2.2. Impact Survey for 4C Certification Bodies

In addition to the impact survey among the Managing Entities, 4C surveyed another important stakeholder group - active Certification Bodies (CBs) cooperating with 4C. The questions helped to understand the perceived impact of 4C within the 4C Units they are auditing, with a special focus on the farm level. One question also addressed possible improvement areas of the 4C System. 20 responses have been received of a total number of active CBs of 23.

The majority of CBs stated that the greatest impact of 4C certification at the farm level lies in the area of good agricultural practices, especially with regard to the responsible use of agrochemicals such as fertilizers and pesticides, as well as a decline in the use of banned pesticides. As one auditor explains, “Producers have gradually reduced the use of pesticides through integrated pest management activities in the coffee plots, alternatively using mechanical measures to minimize impacts on human health and living environment”.

Regular capacity building and trainings with regard to pesticide use and minimization positively influenced and sped up the reduction of pesticide use. These trainings covered the application of pest control, integrated pest management, and control measures in a mechanical and biological way. As one CB states “It is crucial to create an environment that provides a soil with good fertility and abundant organic matter, improve biodiversity to bring more natural enemies and work with pruning management techniques and resistant plant varieties.”

Talking about biodiversity, the biggest improvement triggered by 4C concerning the protection of flora and fauna lies in raising awareness on forest protection and biodiversity. According to one of the auditors, “The application of the 4C standard is a solution to prevent current and future deforestation”. Improvements comprise having multi-crops, more shade trees, and the conservation of protected areas and forests. Beyond that, improvements in biodiversity are taking place due to reduced pesticide application and improved water and waste management.

In addition to that, a significant increase in quality and productivity is observed thanks to regular trainings on good agricultural practices, monitoring and record keeping procedures required to comply with the 4C requirements. This contributed to the improvement of the management capacity and economic efficiency on farms. A positive change could also be identified in coffee harvesting, processing, storing, and preservation. Especially with regard to the coffee picking: the percentage of green coffee beans harvested was reduced, immediate processing took place, and storage ensured ventilation to avoid getting mold. The result was an improved coffee quality.

Sharing their experience with regards to the non-conformities related to the 4C Code of Conduct and the certification system requirements, CBs highlighted that most of them occur in record keeping of e.g. fertilizing, watering, using pesticides as well as irregular production recording. Besides, social non-conformities are sometimes present, such as inadequate labor safety. A variety of appropriate measures have been taken by the 4C standard and its users to eliminate those, in particular, trainings on working conditions, including worker contracts, rights and obligations, wages and working hours, worker safety, and economic administrative aspects, including record keeping and general organization of the 4C Unit and supervision. The topics of waste handling and the use of agrochemicals are also frequently required to be integrated into mandatory capacity building.

This led to, as recognized by most CBs, 4C creating increased awareness of workers’ rights and triggering a major improvement over the years with regard to social issues in the area of working conditions, including wages, working hours, and occupational health and safety. Furthermore, having a detailed look at the issue of child and bonded labor, the impact has been that producers and service providers have examined the documents more carefully and considered the age of their hired workers in order to ensure that no minors are employed. The general awareness was increased, leading to the formalization of non-recruitment of children and forced labor.
As for the particular impact on the service level within a 4C Unit containing local traders, wet and dry mills, most CBs observed increased awareness of sustainable practices when providing services, especially concerning the social dimension, as well as an improvement in the quality of the services. Apart from that, traceability along the green coffee bean has been established, controlled, and improved thanks to their participation in the 4C certification.

Further mentioned aspects with substantial positive impact include the improved market access, allowing farmers to sell their coffee at a better price, and improved business relations between the Managing Entity and its producers.

CBs also made some suggestions on how the 4C standard could improve to increase the impact of the 4C certification. The recommendations contained strengthening of the monitoring of 4C Unit activities through annual audits, increasing the number of surveillance audits and having a more direct and permanent dialogue with coffee growers at a local level to encourage them to join and meet the requirements of the 4C System. Additional areas for improvement are seen in the section of traceability. In addition to that, it is important to intensify marketing and communication efforts to further promote the consumption of 4C coffee and support the uptake of 4C certified coffee as well as of the premiums paid.
7.3 TESTIMONIALS OF 4C SYSTEM USERS

Managing Entities:

"COCATREL HAS BEEN A PARTNER OF 4C for a long time and, in this process, we have found that 4C helps us a lot in directing the sustainability and continuous improvement projects that are brought to the producer since these are implemented and worked on jointly with 4C. We have achieved greater credibility in both the foreign and domestic markets, and we pay good prices for the producer's coffee through market liquidity, which is often guaranteed through 4C certification. We recommend 4C because it is the largest coffee certification in the world and because it is serious, respected, and accessible to small, medium, and large producers, thus uniting all links in the coffee production chain." - Gabriel Miari, Coordinator Trader and Thamiris Bandoni Pereira - Responsible for Certifications, COCATREL (Brazil).

"4C AND THE IMPLEMENTATION OF THE 4C CODE OF CONDUCT have been valuable in the Colombian coffee industry promoting the adoption of the concept of sustainability on the farms for a large number of producers, increasing the visibility of small producers and allowing them to enter the supply chains of differentiated and specialty coffees. It has been possible to take farms to a higher level in terms of good agricultural practices and cultivation in each of the related components. Moreover, coffee growers have, to a greater extent, become aware of the necessity to care about the environment, advanced in the implementation of good practices, and leveraged projects that benefit communities with the participation of international actors in the supply chain, such as clients interested in supporting sustainability projects and programs." - Diego Robles Marcucci, Sustainable Trade Specialist, Federación Nacional de Cafeteros de Colombia (Colombia)

"WE AT OUTSPAN IVORE S.A. BELIEVE THAT 4C positively contributes to several important aspects of coffee production, including quality of coffee, management of farmer networks and cooperatives, introduction and active implementation of good agricultural practices as well as the promotion of a caring attitude towards the protection of the environment. Over the years with 4C, we have been able to put in place a coffee demo plot increasing farmer knowledge of good production techniques, introduce a training school for farmers, and map coffee plantations for better monitoring and evaluation. Moreover, the premium received by 4C certified farms was used to purchase solar energy lamps and vehicles for easing the commute in the hinterland and provide education for children by sending them to school. The 4C certification of the supply chain has brought in more belief from the customers and, with more traceability, increased the quality of coffee sourced." - Anubhav Kanodia, Outspan Ivoire S.A. (Ivory Coast)

"The 4C program helped me to reduce the amount of fertilizer applied in the coffee fields. We also increased our income by diversifying our production with banana and pepper thanks to the trainings provided by the 4C program. Furthermore, we started keeping our records related to production costs and now have a good overview of our cash flow and financial results." - Ngatinem Dsn. Kampung selang, Baturetno Dampit - Malang (Indonesia).
Certification Bodies:

“I (AND CAFECONTROL) HAVE COOPERATED with 4C Services (former 4C Association) since 2007. Over the years, I contributed to the revision of the 4C Code of Conduct as well as other 4C regulations and have witnessed how 4C has implemented a lot of improvements, including the introduction of innovative tools, facilitating the application for the stakeholders. 4C is a global sustainable coffee production initiative that is recognized and supported by many stakeholders. The vision of 4C corresponds to the current market tendency, especially after the Covid-19 outbreak. That is: ensuring the sustainability of the supply chain and auditing based on a comprehensive risk assessment and aspiring continuous improvement of the participating units.” - Ving Le Hong, CAFECONTROL (Vietnam)

“4C TRAININGS AND WEBINARS HAVE BEEN OF GREAT HELP in improving auditing skills, creating awareness on changes and updates in the 4C system. Although implementation can be challenging sometimes, as different Managing Entities might interpret the same criteria and requirements differently, we see how 4C is confronting this and other challenges and improving over time by developing certification guidelines that are in line with specific checkpoints and criteria and adjusting audit checklist for different actors within the 4C unit. The portal system approach has made the entire audit process from request to reporting more efficient. AfriCert would recommend 4C because it is a standard that different actors in the 4C Unit can implement with ease since there are clarifications for compliance.” - Margaret Wanjiku, AfriCert (Kenya).

“4C STRIVES IMPLEMENTATION OF ITS SUSTAINABILITY PRINCIPLES and continuous improvement of each certified group, although it can be challenging to implement improvements in the group as a whole. We appreciate active and accessible communication between 4C and auditors in Brazil on various matters, such as improving the understanding of the principles, additionally facilitated by the creation of the 4C portal and issuance of the newsletter. Apart from that, 4C improved the format of the audit checklist, breaking down the questions to give a better understanding of the principles, requirements, and multiple indicators. We are pleased to cooperate with 4C as it is a coffee certification that aims at the tripod of sustainability and allows mapping the challenges of groups, proposing improvements and actions that lead to good practices.” - Fernanda Aparecida Vieira de Carvalho, 4C auditor, WQS do Brasil Ltda (Brazil)
“IT IS VERY IMPORTANT FOR NESTLÉ to be supplied with Responsibly Sourced coffee. This means knowing where the coffee came from and how it was grown, using independent and internationally recognized standards and methods to verify or certify it. 4C certification has been playing a major role in our Responsibly Sourced coffee journey, with its inclusive and farm-group-based sustainability approach enabling a scale that benefits a large number of farmers and suits well the size and breadth of our business. Over the past few years, there have been great improvements and developments of the 4C program, using new learnings and technologies to make it even more robust and relevant for the entire coffee sector. We continue to support the 4C program and its enhancement actions, with a special welcome to this first (of many!) 4C Impact Report.” - Marcelo Burity, Head of Green Coffee Development, Nestlé (UK).

“4C SERVICES, ITS STANDARD, AND PARTICULARLY ITS ENGAGEMENT for sustainable structures and processes on the ground is a relevant factor for Melitta as well as for the coffee sector as a whole. Against this background, we will among others start a joint project supporting growers communities in Colombia fostering the attractiveness of coffee farming for the youth.” - Stefan Dierks, Director Sustainability Strategy, Melitta Group Management GmbH & Co. KG (Germany)

“WE WILL PROMOTE ETHICAL CONSUMPTION BY MARKING THE 4C CERTIFICATION LOGO ON OUR PRODUCTS. In the autumn of 2020, for the first time in the Asian market, we at Ajinomoto AGF introduced the marking of the 4C certification logo into the packaging for some of our flagship stick coffee products. 4C program has established sustainable, trustworthy, and fair coffee supply chains by applying strict criteria to economic, social, and environmental conditions for the production and processing of coffee. We will continue to promote the realization of sustainability in the production and distribution of coffee beans through the procurement of the coffee beans cultivated on coffee farms conformable to the 4C certification system.” - Hideki Takeuchi, Corporate Executive Deputy President, Ajinomoto AGF, Inc. (Japan)
"BIODIVERSITY PROTECTION IS ESSENTIAL for agriculture and the future of coffee cultivation. 4C Code of Conduct includes effective biodiversity criteria, such as a requirement of an action plan to protect and restore high biodiversity areas, natural vegetation, fauna, soil and water sources, and sensitive areas. Coffee farmers need support to comply with these criteria and implement an action plan of good quality. With the support of environmental NGOs, 4C offers training on biodiversity which proved to be highly demanded. Furthermore, a Biodiversity Performance Tool Coffee is in preparation to support farmers in the elaboration of their action plans. With these activities, the 4C standard creates acceptance and capacities - both are necessary to finally make progress towards the goal of halting the loss of biodiversity." - Marion Hammerl, President of Global Nature Fund and Managing Director of Lake Constance Foundation (Germany)

"PRACTICAL SOLUTIONS ARE NEEDED on the pathway to SDG 2 ‘Zero Hunger’. 4C in combination with the Food Security Standard (FSS) offers a practice-proven approach to identify the causes of food insecurity and to implement targeted measures. This makes 4C the first coffee standard that explicitly addresses the Human Right to Food. This is an important step towards the future where food insecurity among coffee farmers and workers doesn’t exist." - Dr. Rafaël Schneider, Deputy Director Policy and External Relations and Coordinator Food Security Standard (FSS), Welthungerhilfe (Germany)
7.4 IMPROVING LIVING CONDITIONS FOR SMALLHOLDERS

A vital part of the 4C System is the inclusive approach, which enables coffee producers, especially smallholders, to enter certification while actively encouraging the implementation of better and more sustainable agricultural practices. 88% of all producers which are 4C certified are smallholders. 4C puts special emphasis on the inclusion of smallholders as those are the ones most in need to improve their livelihoods and the ones most benefiting from certification. Smallholders can achieve a real impact on the ground through 4C’s continuous improvement approach. 4C is therefore operating a group certification scheme, in which the Managing Entity of a certified 4C Unit takes responsibility for continuous improvement of its coffee producers through capacity building measures and improved access to trainings and services.

7.4.1 Case Study Colombia

More than four hundred smallholder farmers in the municipality of Jardin in Colombia have chosen 4C certification to grow coffee more productively and sustainably. They are all members of the De Los Andes Cooperative, a multi-actor organization founded in 1961, which is committed to ensuring that growers receive a fair share for their effort. The cooperative is located in the Andes, Antioquia, one of the major coffee growing regions of Colombia.

The Cooperative has been involved with 4C since 2014. Farmers are proud to participate in an international sustainability certification program such as 4C, states Maria Hernandez, Project Director at the De Los Andes Cooperative, as 4C targets sustainability through taking care of the environment, water resources, reforestation, and soil conservation as well as looking at social aspects such as good working conditions and respect of human and labor rights. “4C makes farmers more aware that they have a business that needs good administration and improvement plans to comply with market requirements. Also, 4C is demanding in terms of training, not only for the owner or manager of the farm but also for workers and the staff on the farm”, outlines Maria the benefits of the 4C System for the farmers.
Through continuous improvement plans which have to be set up by 4C certified units, impact on the ground with regard to environmental, social, and economic sustainability is generated. Support with technical assistance is provided by the De Los Andes Cooperative to its farmers to facilitate the implementation of the measures stated in the Improvement Plan. For example, with regard to the 4C requirement to conserve and use water resources efficiently, the Cooperative promotes the installation of the best value water treatment system, which has been tested to comply with local regulations. Technicians from the Cooperative provide the farmers with a list of materials and show them how to get the water treatment up and running. The Cooperative also searches for co-funders that would like to help with finance. 4C is continuously working on increasing and better measuring the impact of 4C certification on the ground. Constant dialogue with its certified coffee units provides 4C valuable insights on where further support is required.

De Los Andes is the first coffee growing cooperative using GRAS (Global Risk Assessment Services), a web-based tool based on remote sensing and GIS technology that provides comprehensive sustainability-related geo-referenced information on biodiversity, land use change, carbon stock, and social indices. The occurrence of land use change can be verified by provided heat maps and using a simple index to interpret greenness called the Enhanced Vegetation Index (EVI), which allows users to identify the history of the land use and to detect the exact point in time of land use changes. 416 coffee farmers of the De Los Andes Cooperative have been analyzed by GRAS with respect to biodiversity, potential land use change, carbon stock, and social indices using a semi-automated methodology for sustainability risk assessment. Based on the assessment, the overall GRAS Index has been calculated in order to identify farmers with a high sustainability risk and to exclude from certification farmers that have been involved in e.g. the conversion of primary forests. Thus, the tool supports the establishment of deforestation free coffee supply chains, which are more and more requested by the markets. Auditors can use it for risk analysis prior to certification. Trainings provide the farmers with the knowledge to prevent further deforestation.

Looking to the future, Maria says "De Los Andes is looking forward to further deepening its cooperation with 4C to improve the living conditions of farmers by helping them to increase yields and income and at the same time safeguarding biodiversity and carbon stock. This will go along with developments of partnerships for gender equality and empowerment of women in rural areas."

Colombian coffee is renowned worldwide for its individual taste and quality. Its unique properties have been given the protected designation of origin status by the European Union. The smallholders in the Jardin area produce very good quality Arabica coffee from their farms, each of which is less than five hectares. With 4C, consumers know that one of their favorite coffees will benefit small growers and the environment. De Los Andes is committed to expanding the market for 4C coffee and spreading its messages of ethical and responsible production to the four corners of the world.

To learn more, visit www.gras-system.org.
About De Los Andes Cooperative

The De Los Andes Cooperative is the result of the combined efforts of more than 3,600 members, who work every day to generate a better future and achieve sustainable development in the field. On 1,200ha of farmland, a subset of more than 400 members are producing 4C compliant coffee with an annual production capacity of 2,200 metric tons. Their mission is to actively participate in the sustainable development of the coffee growers, their family, and the region. The Cooperative is steadily growing with new associates continuously trained in the principles of working in a cooperative.
7.4.2 Case Study Vietnam

Since joining the 4C program in 2010, major Vietnamese coffee exporter Simexco Dak Lak Ltd (SMC) has involved 4,605 farmers first in the 4C verification and then, starting from 2018, the certification system. The participating farms, which were selected for the improvement of agricultural and fair trade practices and to create a sustainable coffee community, are located in SMC’s main sourcing areas: the communes of Eakao, Buon Trap, Eatan, Eatoch, DlieYang, Ea Hao, Eadrong in Dak Lak Province, Vietnam’s Central Highlands.

Founded in 1993, Simexco Dak Lak Ltd (SMC), now one of the leading Vietnamese coffee exporters, has built a dynamic purchasing network directly from the farm gates and plantations and invested in modern coffee processing factories and staff capacity building. Implementation of the sustainability criteria towards more responsible coffee production set by the 4C Code of Conduct contributed to the improved production methods and better farmer livelihoods.

SMC’s Sustainable Team highlights that “since joining 4C, SMC has seen positive impacts on farmers’ lives with regards to economic, social, and environmental aspects”. They are optimistic about future development, recalling the progress achieved so far: “the general awareness of farmers has greatly improved. Today farmers are confident about implementing Integrated Pest Management measures, applying fertilizers according to the usage criteria, and handling pesticide bottles and containers properly to prevent harming the environment. They have successfully applied good agricultural practices on their coffee farms and already experience multiple advantages of sustainable farming.”

WATER CONSERVATION

Coffee farmers in SMC’s main sourcing areas have to water their crops four to five times per season. According to the original irrigation method, each turn used about 600 liters of water per tree, not only wasting this valuable natural resource but also requiring significant human effort. With the help of a water meter, farmers are now able to measure the amount of water just enough for each irrigation session, which results in water savings of about 30% compared to the previous irrigation method. Besides, farmers can apply fertilizer through the irrigation system to save time and labor, reduce farming costs and fertilize regardless of the weather. New water storage ponds have also helped farmers to alleviate the problem of irrigation during the dry season and contributed to improved farmers’ livelihoods by offering opportunities for fish and seafood farming.
GENDER EQUALITY

In the past, mainly men managed household finances and participated in training sessions. However, within the framework of the 4C program, the situation changed, as farmers started participating in trainings on gender equality and female empowerment. Women now work on the farm together with their husbands. They have appropriate financial management plans, directly participate in trainings at the rate of up to 50%, have additional access to technologies, and are able to further learn and share the experience with each other. Women actively voice their opinions and raise issues for discussion together. Trainings have also increased men’s ability to take responsibility for childcare, housework, and household management.

IMPROVING THE ENVIRONMENT AND ECONOMY

Farming environment has also been significantly improved by balancing microclimate in gardens through intercropping of coffee with other crops, resulting in improved farmer income throughout years of participating in the sustainable coffee production program. The increased environmental and social consciousness of farmers participating in the 4C program also has a positive spillover effect, affecting non-program farmers and contributing to their motivation to engage in the more sustainable production of coffee as well.

“4C is proud to support Vietnamese farmers and delighted to see how Simexco Dak Lak is driving sustainability in coffee production,” says Viet Ha Nguyen, 4C Services GmbH. Currently, 4C and Simexco are partnering in a joint project in cooperation with IDH, the Sustainable Trade Initiative, and JDE, aiming at calculating carbon emissions in coffee production (see in Chapter 7.8. 4C Participation in Projects).
About Simexco

Simexco Dak Lak Ltd, a state-owned company founded in 1993, is recognized as one of the leading coffee exporters of Vietnam, the largest Robusta producing country in the world. Annual exports of Simexco Daklak range from 1.3 to 2 million bags (60 kg) of coffee, representing 8% of coffee production in Vietnam. More information under www.simexcodl.com.vn/.
“4C was the first sustainability standard for several of our traditional NESCAFÉ Farmer Connect coffee origins. For many smallholder farmers this was an introduction to the sustainability topic and it increased awareness of social and environmental issues while also facilitating change of behavior at farmer and community level. The implementation highlighted remediation interventions of sustainability challenges, leading to positive changes, greater transparency, reduction of the environmental impact, and improving livelihoods, both for the current as for future generations of farmers.”

- Nescafé/Nestlé
7.5 NO CHILD LABOR

Child labor in coffee

Child labor is one of the biggest social challenges the coffee sector faces. 17 coffee-producing countries all over the world have a risk of child labor (DOL, 2018). Children as young as five or six years old might be found working on family farms or they may be involved working alongside their parents who are employed as farm workers (Kultahathi, 2016). For these reasons, the eradication of child labor in all its forms by 2025 is included in the UN Sustainable Development Goals under SDG 8. Many actors, including coffee roasters and retailers, governments, non-profit organizations, and certification schemes seek to achieve this goal. However, as the recent news of young children picking coffee beans on farms in Guatemala have shown, the risk of child labor on coffee plantations remains high.

Verification of child labor within 4C

Within the 4C standard, child labor is considered an Unacceptable Practice, wherefore it is crucial for 4C that independent third-party audits ensure that this practice does not occur on 4C certified coffee farms. Child labor could be any work that jeopardizes children’s health, safety, or morals, such as slavery, debt bondage, or forced labor. The standard requires that children’s rights to childhood and education are preserved, which comprises that all children under the age of 15 (or of legal school age) should be attending school and must not be part of the regular workforce. Involvement in light family work outside school hours is permitted.

During 4C audits, any indication of child labor is verified. To do so, auditors must carry out thorough media research, document checks, site inspections, and interviews with relevant stakeholders. Documentation to be checked includes, but is not limited to, companies’ recruitment policy, worker contracts, workers register where age/date of birth is indicated, and school records. Interviews must be conducted with workers, employees’ representatives, school staff, and any other relevant stakeholders to cross-check information obtained from different sources.

Verifying child labor on coffee farms can pose a big challenge to auditors and to certification schemes, who need to continuously work on improving the means to audit the issue. Even though national laws against child labor might exist, their enforcement is often weak in coffee producing countries. Project-based approaches are a valid option to address the issue of child labor within a single community but do not have the same geographical scope as certification schemes, hence serving rather as a supplement than as an alternative.

4C measures to improve the verification of child labor

4C is continuously working on the improvement of its procedures and tools to facilitate the verification of child labor by enhancing its risk assessment procedure through systematically evaluating information from various sources and making it available to the auditors, operating an automatized checking procedure which compares 4C certified coffee producers with producers listed on the Brazilian Transparency List of Contemporary Slave Labor and expanding the 4C Integrity Program through increasing the number of unannounced integrity audits in regions with a high risk of child labor.

4C is in close contact with its auditors and Certification Bodies to continuously discuss current issues auditors face with regard to the verification of 4C requirements. The topic of verification of child labor is included and discussed during the 4C trainings and stakeholder conferences.

4C appreciates any kind of feedback related to cases of non-compliance with 4C requirements. Reports can be sent either directly via email or the feedback form on the 4C website.
7.6 NO DEFORESTATION

Cutting of primary forest or destruction of other forms of natural resources that are either designated by national and/or international legislation is an unacceptable practice under 4C. Therefore, any coffee producer certified under 4C has to comply with this no-deforestation requirement. Evidence that no forests have been cut down by any coffee producer or service provider of the 4C Unit since 2006 and that no protected areas have been destroyed must be provided to the auditor.

4C and the Sustainable Coffee Challenge (SCC) initiative

4C has become a partner in the Sustainable Coffee Challenge, strengthening and confirming its commitment to promote deforestation-free and climate friendly coffee supply chains and to support initiatives to mitigate climate change impact. This decision will pave the way for collaboration with other stakeholders that are committed to addressing the challenging issues of the coffee sector, including how deforestation-free coffee supply chains can be verified using innovative tools and technologies based on remote sensing data and GIS technology. Thus, 4C is committed to supporting the Global Risk Assessment Services (GRAS) tool to add important coffee producing countries. This will increase the capacity of the GRAS tool to map land use change, deforestation, areas of high biodiversity, protected areas, and other environmentally important data including alert information. As of today (February 2021), the GRAS tool includes data for 27 coffee producing countries. The target to increase the number of coffee producing countries up to 25 by 2021 is accomplished!

The GRAS tool is used by 4C auditors during the risk assessment of companies that want to become or remain 4C certified. This innovative web tool offers information on ecological and social sustainability, as well as land use change and social datasets. It provides high-end solutions to prove compliance with sustainability requirements, to implement no-deforestation strategies in a transparent and verifiable way, to manage sustainability risks, to support mapping of supply chains, and to facilitate the certification process.

The Sustainable Coffee Challenge is a collaborative effort of companies, governments, organizations, and institutions, conceived and facilitated by Conservation International, that strives to lead the coffee sector into full sustainability. By working to align common visions, increase transparency, and accelerate progress on goals, the Challenge aims at stimulating greater demand for sustainable coffee worldwide.
7.7 FOOD SECURITY

Hunger and malnutrition persist in many countries of the Global South producing agricultural commodities for global markets. Small scale farmers and agricultural workers are among the core groups of the hungry. In the wake of the pandemic and climate change, food insecurity is increasing in rural areas. This issue has been given little consideration in coffee production, but is of urgent relevance in the context of social sustainability.

Increasing international demand for agricultural commodities fosters competition between food security and production for export in many countries. In addition to this competition, climate change intensifies the risk of food insecurity as described in the publication “Global Hunger Index 2019: The Challenge of Hunger and Climate Change”, published by Welthungerhilfe e.V. (a German organization for hunger and emergency aid) and Concern Worldwide. Advantages of early natural disaster forecasting, mitigation projects, and possibilities, as well as recommended actions, are listed with considerable straightforwardness.

To address the challenge of food security, WWF, Welthungerhilfe, and ZEF (Centre for Development Research), with the support of the German Ministry for Food and Agriculture, have developed a Food Security Standard (FSS), that focuses on the Human Right to Adequate Food and aims at enhancing food security. It provides a set of practical and measurable criteria and audit tools that can be integrated into the 4C certification audit upon request as an add-on checklist. 4C strongly encourages and supports its uptake. By adopting the FSS, companies along the value chain can demonstrate that they are committed to the Human Right to Adequate Food and the UN Sustainable Development Goals (SDGs). The FSS was tested in several pilot projects in Latin America, Asia, and Africa in 2018 and 2019, and is now ready to be implemented on the ground.

Through numerous social requirements, such as wages, working conditions, occupational health and safety, and non-discrimination, the 4C certification system can be used as a tool to minimize some of the impairments suffered by people in rural areas and agricultural lands located in less privileged parts of the world.
7.8 WOMEN IN COFFEE

7.8.1 Case Study Ethiopia

Nowadays women are becoming more and more visible in the traditionally male-led coffee sector. Combatting gender inequality issues is included in the sustainability agenda of many actors involved, such as producers, traders, roasters, certifications, governments, and NGOs. 4C also stands for gender equality and actively contributes to the improvement of social and environmental practices. We talked to Meseret Desta, CEO of Green Bean Agro-Processing PLC, who is seeking 4C certification for Godere Coffee, named after the specific place in the GAMBELEA region where it is produced - Godere Woreda.

What is your coffee story? Could you tell us more about your company?

Afro-Tsion Construction PLC, which is one of the largest general contractors in Ethiopia led by my brother, was looking for diversification opportunities and decided to invest in local coffee, as the region has great potential with regards to climate and soil conditions. I became responsible for the project and coffee turned into my absolute passion. Not only the great potential of Ethiopian coffee attracted me, but also women's involvement and social impact which could be generated via working in this sector. Together with my sister, we now lead Green Bean Agro-Processing PLC which started exporting in 2017. We, Ethiopians, are also great coffee drinkers on our own. That is why it is my pleasure to also be a general manager of a coffee shop “Afro-Flavor Café” with the subtle goal to provide a place for women to meet and exchange their experiences.

How does the coffee industry look like for a woman in Ethiopia? What are the main challenges faced by Ethiopian female coffee farmers?

There are several challenges women face. It all starts with men being in charge of decision-making processes. Then comes the issue of having land ownership. This is a rare case that women actually own the land, they cannot personally benefit from it and often have to look for a male who could support them. Another problem is access to information and market knowledge. Women commonly lack education and trainings to truly grasp the market opportunities and make use of them. Entering marriage at a young age and being responsible for the household leaves them little time to educate themselves. So, I would say we are facing several main issues: decision-making, land ownership, and lack of knowledge. Additionally, there is not enough support from the outside due to a lack of finance for initiatives supporting Ethiopian women in coffee. We need to empower women to give them better opportunities to realize themselves in the coffee business.

Godere Coffee is owned by women. You describe the experience of coffee as “a combination of the preservation of nature, the sweat, and passion of strong women and the love for the berry”. Could you tell us more about the strong women in your company? How many women are involved in producing coffee?

International Women’s Coffee Alliance’s (IWCA) studies demonstrate that women in Ethiopia do 70% of work in the coffee value chain, including harvesting, washing, and sorting coffee cherries as they tend to be more careful than men, as well as roasting and brewing. Men mostly step in when we talk about loading and selling the coffee. We try to contract more female farmers, although it is very difficult to find farms owned by women and employ more women in general. For this reason, we are also looking into further areas, except for coffee, which can generate impact, for example, spices or honey; women could be sole owners of their bee hives.

How does Godere Coffee contribute to improving the lives of its female coffee growers?

We maintain long-term relationships with farmers and pay a price premium to ensure that our women can have a decent income. We also organize trainings and other capacity-building activities. We aim to educate women not only on the technical side but also explain the true value of the farm and empower them to make decisions on their own.

You are also the president of Ethiopian Women in Coffee (EWIC). How does EWIC help to promote gender equality and empower women in the Ethiopian coffee sector?

EWIC was legally established in 2016 to benefit women in the coffee value chain by sharing information about the sector, providing capacity building and trainings, creating a supply chain, and a networking environment, where women can share, support, and learn from each other. Our alliance has 44 members - all formidable businesswomen. EWIC is also one of the 23 chapters of IWCA. It is also vital to further increase the visibility of women in the sector. In order to achieve this, we participate in national and international expos and policy dialogues. We have been (...)
(…) successfully developing and enabling women in coffee to contribute to the growth of the coffee sector in Ethiopia. People need to realize that if women get help and become stronger, the whole economy will grow and benefit from it.

**What are the biggest challenges EWIC is currently experiencing?**

We are talking about financing and human resources for training and capacity building. There is a great need for partnerships of both kinds. We are constantly looking for trainers who have solid experience in working with women in agriculture and understand all the pitfalls. We have 44 members, but this is not enough to cover the whole scope of work and reach out to every woman in Ethiopia. An additional problem is that we do not have a common facility to meet and conduct trainings, but this problem could be solved easier than the first two. At EWIC, we believe that partnerships are key to tackle many challenges we are facing in the coffee industry, such as the recognition and inclusion of as many women as possible. Over the past three years, we have been able to create bigger impacts by working closely with international and local partners. Partnering with us means supporting us to realize our vision and, on a larger scale, promoting Ethiopian coffee and culture to the world market.

**4C also stands for gender equality and actively contributes to the improvement of social and environmental practices in the coffee sector. When did you first hear about 4C?**

In November 2019, we participated in training in Germany and had a chance to visit 4C headquarters.

**Could you tell us a bit more about what motivated/inspired you to pursue 4C certification for your coffee?**

Our mission is to produce, process, and export top quality Ethiopian green coffee beans in a sustainable way. We want to make sure that our work is environmentally friendly. As our farms are close to the UNESCO protected forested area, it is of special importance. 4C uses innovative tools, such as GRAS (Global Risk Assessment Services) tool to track land use and biodiversity change. This would enable us to ensure that we are doing the right thing.

**What are your long-term goals in the coffee industry and how can 4C help you achieve those?**

We would love to increase the volume of coffee we harvest and do it sustainably, implementing the best practices, helping smallholders and increasing the productivity of our farms. Here we need 4C’s help to ensure that social and environmental aspects are in line with sustainable development and provide a credible sign of our commitment, increasing stakeholder trust in us. We hope to improve our visibility and access to local and international markets, highlighting that our coffee is good for people and the planet. Apart from that, it would be great to increase women’s involvement and achieve a bigger impact in the empowerment area, working with international and local partners.
7.8.2 Case Study Brazil

The Cooperação dos Caficultores da Zona de Três Pontas (Cocarel), based in the south of the state of Minas Gerais, celebrates in March three full years of the Cocaretel Grupo Cafeteira (Caffeine Group). In such a short time, the group which is formed only by women (cooperative members, wives, and daughters) achieved visibility and national and international recognition for the seriousness with which it has been working for the cooperative.

"Cocaretel is the coffee growers’ cooperative with the highest percentage of women in Brazil. Once we became aware of this data, we could not help but embrace this group formed by female producers. Our purpose is to bring them closer to the management of the cooperative and empower them through training and knowledge so that they can make assertive decisions in their businesses," says Marco Valério Araújo Brito, president of Cocaretel.

During their first year, trainings, courses, and meetings took place, and good practices were exchanged among these women, who fully devoted themselves to the project, with reciprocity, engagement, and dissemination of the acquired knowledge.

"The Grupo Cafeteira for us, producers, has been very important because there has never been such a great appreciation of women in the field. This Cocaretel initiative has encouraged us, with training and meetings, and empowered us to participate more in the day-to-day activities of the farm. It is essential to have technical and practical knowledge of all the processes, from tree to cup, so that we can demand and produce quality coffee, keeping up with all the requirements of consumers and the market, but not leaving sustainability aside," explains Adalgisa Miranda, a cooperative from Cocaretel.

Cocaretel’s support and investment in the group helped Cafeteira to gain visibility and to achieve further goals. The story of successful empowerment through information and knowledge reached the market and coffee importers, becoming another good business opportunity. In 2019, Cocaretel exported the first coffees produced by the women of this group.

"Since the creation and consequent promotion of Cocaretel’s Cafeteira, I have seen the increasing interest of the foreign market for the coffee of these women. We were very happy to close this first container of fine coffees, being sold with very representative premiums, because they are very good coffees and because they are produced by the members of Cafeteira," explains Gabriel Miari, coordinator of Cocaretel Direct Trade. Cocaretel’s exclusive sector for the export of fine and specialty coffees.

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Brazilian cooperative Cocaretel celebrates 1 Year of the Grupo Cafeteira, launching coffees produced exclusively by women and 4C certified.
Besides the green beans, the cooperative has a line of industrialized, roasted, and ground coffees. Among the specialty coffees is the Montrês line. With seasonal and limited editions, Montrês coffees are produced with carefully selected coffees from the origin, using as raw material the best special 100% Arabica beans, with differentiated notes and aromas.

In March 2019, Cocatrei launched the Pearl and Violet coffees within the Montrês brand, completely produced by women. In 2020, in celebration of the first year of Grupo Caferia, Cocatrei launched two more coffees produced by them, Jasmine and Aurora.

The Montrês brand of coffees is the first Cocatrei industrialized coffees to carry the 4C seal on their packaging, attesting to the seriousness of the cooperative in the production of beans. The 4C certification is today the largest certification for coffee in the world and establishes sustainability principles in the economic, social and environmental areas. 4C also values and strengthens the presence of women in the field, reinforcing in its criteria equal opportunities for women, such as training and knowledge acquisition, as well as in its positioning against discrimination.

4C celebrates together with Cocatrei the success of the Grupo Caferia, and supports the actions that empower women worldwide. Cocatrei is the largest cooperative in the world in volume of 4C coffees, having almost all its six thousand members 4C certified. The cooperative has been participating in the 4C coffee certification system since November 2009.
7.9 4C PROJECTS

4C is impact-driven, going beyond certification, as together with its system users it develops and implements projects to preserve precious landscapes and biodiversity and to improve working and living conditions of coffee growers, their families, and workers.

4C study on social issues in the Philippines

4C helps companies to pursue their commitments to sourcing environmentally and socially sustainable coffee. This does not only include certification services, but also complementary projects to address specific issues.

4C went on a field trip to the Philippines to interview producers, workers as well as local government and NGO representatives.

One of these examples is a recent 4C partnership with Nestlé. The goal of the project was to conduct a study with a focus on social issues in the Philippines. 4C assessed the local situation and identified critical topics as well as developed and recommended feasible measures to address the corresponding issues together with Nestlé’s staff. The methodological approach included a desk study and a field trip, where multiple interviews with producers, workers, local government, and NGO representatives were conducted. The main issues of concern identified by 4C were related to the minimum wage legislation and a generally low level of school enrollment for children at secondary and high school age. With 4C’s recommendations in mind, Nestlé is now addressing the situation and developing potential solutions.
4C partners with Simexco, IDH – the Sustainable Trade Initiative, and JDE for reducing GHG coffee emissions in Vietnam

Climate change has a vastly negative impact and is caused, among others, by the increasing amount of greenhouse gas (GHG) emissions in the atmosphere with agriculture as one of the main GHG emitters. Coffee production is no exception here: application of fertilizers and pesticides, deforestation and soil degradation, energy-consuming machines as well as inefficient wastewater management are considered the biggest GHG emission sources in the green coffee bean supply chain.

Measurement of GHG emissions provides an opportunity to address this problem by conducting a scientific and comprehensive evaluation of a farm’s potential to reduce its climate change impact. Having GHG information at hand makes it possible to proceed to the next step and develop an appropriate and viable action plan to reduce, inset, and offset GHG emissions in the green coffee bean supply chain.

“What is the actual carbon footprint of a green coffee bean? How can we feasibly calculate it and what are the limitations? After thorough considerations, we developed a new approach to GHG emissions measurement and started looking for partners ready to test it with us, thus, supporting the development of a scalable robust tool,” – Norbert Schmitz, Managing Director, 4C Services GmbH.

In 2020, 4C partnered with Simexco Dak Lak Ltd (SMC), a major Vietnamese coffee exporter, in a pilot project in cooperation with IDH, the Sustainable Trade Initiative, and Jacobs Douwe Egberts (JDE) to calculate GHG emissions in coffee production. The process involves multiple stages, such as supply chain mapping, filling in and analyzing data templates as well as setting up the first calculator draft.

Based on the calculation results, corresponding measures will be developed to reduce and mitigate GHG emissions.

“This partnership is one more step in JDE’s commitment to work continuously toward 100% responsibly sourced coffee and tea by 2025,” said JDE’s sustainability manager in Asia and the Pacific, Do Ngoc Sy. “In addition to IDH’s foundational support, we are pleased to benefit from 4C’s expertise in calculating carbon emissions in coffee production, which is essential for us to calibrate our efforts and reach our sustainability goal.”

Tran Quynh Chi, Regional Director Asia Landscape, IDH – The Sustainable Trade Initiative also emphasized: “Calculating carbon emissions in the coffee supply chain of Simexco Dak Lak brings added value to our pilot of large-scale sourcing areas in the Central Highlands of Vietnam.” She added: “We need in-depth calculation and analysis to know how it helps farmers increase their profitability and transform the coffee sector from a source of carbon emission to a sink. With this partnership, we are moving in the right direction to start from a small scale pilot to larger scale application of the methodology.”

This project is an important milestone for 4C on its way to developing a “4C Carbon Footprint Add-On” to the certification standard. “European consumers become more and more concerned with the environmental footprint of products they buy. We developed an additional logo to enable coffee producers, traders, brand owners, and roasters to indicate their efforts to improve their GHG footprint,” says Norbert Schmitz.
**Project objective:** Improved sustainable agricultural management of Colombian coffee growers contributing to long-term economic and ecologic viability of smallholder farms, increasing attractiveness for young adults, and market uptake in Europe

**Project management:** 4C Services GmbH

**Project financed by:** The develoPPP.de Project* is financed by the Deutsche Investitions- und Entwicklungsgesellschaft mbH (DEG) from public funds of the German Federal Ministry for Economic Cooperation and Development (BMZ), Melitta Europa GmbH & Co. KG – Division Coffee - and 4C Services GmbH

Based on the calculation results, corresponding measures will be developed to reduce and mitigate GHG emission

**PROJECT BACKGROUND**

Coffee production is one of the most important agricultural activities for the Colombian economy. Yet, aging farmers, ecologic and economic challenges, and the impact of climate change are making smallholder family coffee production in Colombia less attractive. Family farms stop coffee production, start to grow other crops or migrate from the land. In order to maintain coffee production in Colombia in the future, sustainable, socially responsible and deforestation-free farming practices are vital to effectively and efficiently manage the farm and generate increased income, together with certification and better market access/opportunities.

It is therefore the objective of the project to develop and implement, based on a thorough baseline study, an improvement program for the smallholders, resulting in the long-term viability and the increasing attractiveness of the sector for young adults. Pilot regions and interested stakeholders will be involved. Implementation oriented trainings will be a key of the program as well as the linkage of more sustainable coffee production to buyers in the EU market.

**PROJECT MEASURES**

The project structure includes three main pillars:

1. **Baseline Study:**

Desk research in selected coffee producing regions is conducted to determine major challenges and areas for improvement. A detailed risk analysis will be conducted, based among others on remote-sensing technology, to identify social and environmental risks and deforestation in the coffee producing regions of Colombia to further underpin the results of the desk research.

A multi-stakeholder workshop, including local government, coffee communities, young adults, coffee industry and actors, and NGOs, will be conducted to determine the implementation region for the project, together with the focal points for trainings.
2. Training Programs:

The training program will be the key component to achieve changes in the sector. Climate friendly coffee production and adaptation strategies will play a key role when designing the training concept and content. Different degrees of climate change impact require different adaptation strategies, which will be covered during the trainings. Adequate varieties, Improved shade cover, and cover crops are some of the practices required. With increasing degree of impact, it might be necessary to add mulch, temporary shade, living hedges, and/or windbreaks to the farming system. The project supports these activities through the provision of financial contributions for such investments. Training concepts will be contextualized for four different target groups: Demonstration plots, master trainers (train-the-trainer), young adults, and coffee farmers.

The project supports young adults becoming active in coffee farming through organizing intergenerational discussion rounds within coffee communities and cooperatives. Financial support will be provided by the project e.g. new coffee varieties, fertilizer, climate smart agriculture measures, technical assistance to implement measures learned during the trainings.

3. Market Access:

Long-term viability and continuously improved market uptake of green coffee shall be ensured through credible high-level sustainability certification, improved risk assessment technology, marketing and communication campaigns, and developing local and international partnerships.

PURSUED PROJECT RESULTS

Together with its Implementing Partners, 4C aims to improve the livelihoods of smallholder coffee farmers in Colombia. The project pursues that approximately 500 - 1000 coffee producers in the selected coffee producing regions of Colombia own the improved agricultural practices activities that they will implement to achieve better yields of certified sustainable and deforestation free climate friendly coffee and that approximately 200 - 500 young adults are increasingly motivated to remain part of a sustainable coffee production process.

Pursued project results include:

- **Strengthened** capacity for adaptation to climate change and extreme weather conditions and progressively improved land and soil quality. This leads to improved yields and income and hence improved living and working conditions for smallholders
- **Improved** income diversification and non-farm employment to reduce livelihood vulnerability due to poor harvest and negative impacts of climate change
- **Empowerment** of the youth and sense of ownership and responsibility towards the program outcomes
- **Improved** working opportunities in the coffee sector for young adults
- **Improved** access to resources, services, and products
- **Enhanced** relationships between the coffee producers and industry to improve credibility, promote long term collaboration, drive innovation, and expose partners to new perspective and expertise
- **More sustainable** coffee production through 4C certification
Improving biodiversity in coffee landscapes in Vietnam

4C, in cooperation with the Lake Constance Foundation, Agriculture and Forestry Research & Development Center for Mountainous Region (ADC), Vinh Hięp Gia Lai Co., Ltd and Fundación Humedales, has started a joint project to improve biodiversity in coffee landscapes in Vietnam.

PROJECT BACKGROUND

According to a report published by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) in May 2019, nature is declining globally at rates unprecedented in human history. Up to one million plant and animal species face extinction due to increasing deforestation rates, climate change, pollution and other human activities. The report showcases, that the loss of biodiversity is one of the biggest challenges of our time. Intensive agriculture is considered as one of the main drivers of the destruction of ecosystems, overexploitation of natural resources and contamination. Looking into coffee production, it is grown in some of the world’s biodiversity “hotspots”, which are areas of high vulnerability and biological importance.

Vietnam is the second-largest coffee exporter after Brazil, having expanded its area for Robusta coffee production from 15,000 ha in the mid-1980s to 600,000 ha in 2017/2018. The environmental footprint associated with this expansion and the intensification of Robusta coffee production is very significant. Especially the Central Highland region is marked by intensive monoculture plantations and intensive irrigation and fertilizer use which resulted in problems of soil degradation and pollution, destruction of groundwater, and pest infestation. Approximately 15% of Vietnam’s species are considered endangered and much of Vietnam’s biodiversity loss is linked to the loss of natural forest cover.

Improving biodiversity performance on coffee farms not only serves nature protection, but is also the basis for sustainable, successful, and climate change resilient coffee production. Awareness of agriculture-driven biodiversity loss is increasing in European markets, and companies are increasingly committing to more action on biodiversity. However, many projects and approaches are focused on singular topics, such as pesticide use or shade trees. What is missing is a holistic approach to biodiversity, accompanied by a pragmatic approach of demonstrating progress, which can be efficiently monitored and transparently communicated along the supply chain.

PROJECT MEASURES

The Biodiversity Performance Tool (BPT) developed by the EU LIFE Initiative “Food & Biodiversity” is a tool to fill this gap. It is a practical instrument to perform a baseline evaluation of the situation of biodiversity on the farm, makes visible strengths and weaknesses using a classification system of thresholds, and generates a Biodiversity Action Plan based on the baseline evaluation for two lines of action such as the creation of potential for biodiversity and the reduction of negative impacts on biodiversity. It supports farmers or farm group managers to decide which measures to implement to improve biodiversity on the ground and allows transparent communication on the actual progress made.

The BPT will be adopted to the Vietnamese context and applied on different 4C certified farms to evaluate the biodiversity situation and set up and implement biodiversity action plans.

- **Phase – Adaptation** of the BPT to the Vietnamese context and testing of its implementation
- **Phase – Upscaling** through the elaboration and implementation of Biodiversity Action Plan(s) (BAP) on a landscape level
- **Phase – Support** of market access
- **Phase – Dissemination** and anchoring of results

After ADC adopted the BPT to the Vietnamese context, it was used during their first farm visits in mid-January 2021 to conduct a baseline evaluation and identify the potential for biodiversity improvement. The next steps include implementation of the selected biodiversity improvement measures, monitoring and evaluation. The BPT will be further adjusted to be used on a landscape level in Vietnam coffee cultivation.
"We are proud to be a partner in this project, involving some of our farms to test the Biodiversity Performance Tool and to learn about possibilities to improve the biodiversity situation within our supplying farms, with the aim to disseminate this knowledge throughout the region for a wider positive impact on biodiversity," confirms the Certification Department at Vinh Hiep Gia Lai Co., Ltd. The BPT will provide coffee farmers in Vietnam with a practical tool to support them in their biodiversity enhancement endeavors.

EXPECTED PROJECT RESULTS

- **Invaluable** benefits for farmers in terms of training, acquiring support and know-how on developing biodiversity action plans and in-kind support for implementing improvement measures
- **Improved** coffee farming practices that support conservation of biodiversity and lead to better productivity and greater profitability for farmers
- **More biodiverse** coffee regions due to the implementation of biodiversity-friendly coffee production on various farms
- **Increased** awareness at local, regional, and national level on the benefits of biodiversity conservation within coffee plantations
- **Improved** market links between coffee farmers producing biodiversity-friendly coffee and responsible markets in Europe

Apart from the examples mentioned above, 4C has several projects in the pipeline to mitigate environmental and social issues and to improve the livelihoods of smallholder coffee farmers. These include empowering women in the coffee sector, in- and offsetting carbon footprint of coffee, increasing soil health and fertility, combatting child labor in coffee supply chains and monitoring farmer premium. For more details, please contact the 4C team.
8. Learnings

1) Increasing demand for 4C certified coffee

The new 4C System, which underwent several improvements and changes since 2018, performs very well in comparison with other voluntary certification schemes of the coffee industry, as can be seen at the International Trade Center’s “ITC Sustainability Map”. Due to these improvements, 4C enjoys increasing interest from the industry, as the figures of recent years indicate. The demand for 4C certified coffee increased by 14% compared to 2019.

2) The continuous improvement approach of 4C generates a real impact on the ground

4C pursues an inclusive approach, which is intended to enable coffee producers, especially smallholders, to enter certification in order to achieve real impact on the ground in a continuous improvement process. As the conducted impact survey revealed, 4C Units were able to see improvements concerning all three dimensions, in particular, the handling of pesticides, improved management of soil, water and waste, traceability, access to services, child labor, and health and safety procedures.

3) A smart mix of certification and project-based approaches is an effective solution to improve sustainability and increase due diligence in coffee supply chains

Certification is an important part of the holistic approach towards transparent and sustainable coffee supply chains as it supports sustainable production practices on a wide scale, creates incentives for producers to become more sustainable, and provides the necessary information to consumers. There are no alternatives available to differentiate between sustainable and non-sustainable supply chains in global agricultural commodity markets. Nevertheless, it is crucial for certification schemes to know their limitations and to continuously work on achieving increased impact. Project-based approaches are a useful supplement. For this reason, 4C also develops and implements projects, among others, to improve farmers’ livelihoods, empower women, reduce GHG emissions, map biodiversity and land use change.

4) A growing interest in GHG emission calculation, reduction, in- and offsetting as well as improvement of biodiversity

Deforestation, degradation, and farming on marginal lands as well as the degradation of lakes and wetlands are directly contributing to greenhouse gas (GHG) emissions, soil erosion, water pollution through siltation, landslides, and biodiversity loss. As climate change mitigation and biodiversity protection are mutually dependent, the role of highly biodiverse farms is crucial for climate and biodiversity friendly coffee production, which is increasingly demanded by coffee consumers. To respond to this demand and foster coffee production which is good for the environment and people, 4C conducts projects with regard to mapping and increasing biodiversity at the farm level as well as the calculation, reduction and offsetting of GHG emissions, offering a 4C Carbon Footprint Add-On to the 4C certification.

5) Increasing interest to communicate the sourcing of 4C certified coffee on pack

As the report on The State of Sustainable Markets produced by the Research Institute of Organic Agriculture (FiBL), the International Institute of Sustainable Development (IISD) and the International Trade Center (ITC) shows, there is a steady growth of the demand for certified products. Due to this, 4C notes an increased interest by Final Buyers to use the 4C logo on pack to support their sustainable sourcing commitments and ensure the visibility of effort to improve their coffee supply chain to their customers.

6) More comprehensive monitoring data is needed in the future

With this impact report, valuable insights into the activities, projects, performance, and effectiveness of 4C is provided. Nevertheless, the monitoring and evaluation of the impact on the ground still show potential for further improvement in data collection. With the new 4C System Requirements in effect since 1 July 2020, 4C is being able to monitor even better the data and the impact of its certification activities on the ground.
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