

THE ROAD *to* NET ZERO

Coffee Companies Pave the Way with Carbon Offsets

By Nani Ferreira-Mathews



ABOVE
Coffee drying in Myanmar.
Photo by Connie Blumhardt

PRECEDING PAGE
At a coffee farm in Myanmar.
Photo by Connie Blumhardt

CAPITALISM IS NOT AN INHERENTLY sustainable system, and it constantly craves a profit; but could the effort to make a buck end up saving the planet?

It is estimated that by the year 2050, 50 percent of arabica coffee will disappear if climate change is not addressed. Contrarily, it is also estimated that demand for the product will increase by 30 percent in that same time period. In 2021/22, the International Coffee Organization (ICO) pegged global coffee production at 167.2 million 60-kilogram bags, down 2.1 percent from the previous year, and consumption at 170.3 million bags, up by an annual 3.3 percent. Some coffee traders may not see a problem with this future dilemma; after all, the market always adjusts for supply and demand.

The alarming detail hidden in the fact that 50 percent of coffee could disappear is that, presumably, 50 percent of coffee farms will disappear—affecting 25 million coffee workers worldwide. In his book *Cheap Coffee: Behind the Curtain of the Global Coffee Trade,* author Karl Wienhold shares that in Colombia, 20 percent of rural income comes from coffee, and in Honduras, coffee is a source of income for nearly 25 percent of the entire working population. The arable land in which coffee grows, specifically arabica, has already started to decrease. World Coffee Research presented figures at the 2019 Northeast Roaster Forum showing that arable land for coffee production was becoming more and more scarce, beginning at lower altitudes and increasing up the topography year after year.

Having only so much altitude available in our geography, we are running out of time to address these changes. Countries worldwide are finally beginning to enforce the pledges from the 21st Conference of Parties (COP21), held in 2015, and the Paris Agreement, signed in 2016, and in doing so, local governments are demanding a reduction in carbon emissions. In

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Photo by Juan José Sánchez Macías

response, capitalists have created a carbon market to balance carbon emissions. The growing carbon credit market is booming and is speculated to become bigger than gold, oil and bitcoin. Beyond the markets of the Global North, there are projects led by coffee farmers working on carbon sequestration.

In the pages that follow, we will take a look at projects and carbon-neutral models within importer cooperatives and farmer cooperatives. We'll also explore the ways in which a roaster-retailer might find its own path to a carbon-neutral model, take a look at the difference between "carbon neutral" and "net zero," and define terms like "carbon sequestration" and "carbon sinks." We'll also briefly cover the Greenhouse Gas Protocol scopes 1, 2 and 3 for greenhouse gas measurements, as well as the emerging system of carbon trading that some scientists argue does nothing to promote actual change and is just greenwashing. We'll discuss the third-party certification organization B Corp's roadmap to carbon neutrality and its network of assets and resources to help businesses progress in their journey to carbon neutrality. We'll also take a look at how to measure and balance your own roaster-retailer's carbon footprint, and how to enter into the market of carbon credits.

CARBON NEUTRAL, NET ZERO OR ABSOLUTE ZERO?

The term carbon neutral refers to carbon dioxide (CO_2) emissions, which are measured and assigned a "carbon footprint." Net zero is the same idea, but also measures additional greenhouse gases including methane, nitrous oxide and others. To achieve carbon neutrality, a company attempts to offset CO_2 emissions. For net zero, a company attempts to offset all of its greenhouse gas emissions. In either case, it's unlikely a company can actually achieve this zero-footprint status through its own reduction efforts (e.g., green packaging or alternative energy such as solar or wind) unless it's able to create a surplus of clean energy. If a company is able to bring its emissions to a zero sum with these attempts, it would be called absolute zero—a claim we almost never see companies working toward as it is nearly impossible to achieve. Most companies, including over 1,100 certified B Corps, are aiming for a more achievable goal of net zero by 2030. If a company cannot offset its emissions on its own, it must use other offsetting tools, most often the purchase of carbon credits from a certified seller.

I've said "offset" a number of times already. So what exactly does it mean? Offsets are often called carbon credits and can be purchased from various marketplaces. An offset or carbon credit equals 1 metric ton of carbon that has either been removed from the atmosphere through sequestration or prevented from entering the atmosphere through avoidance,







sequestration being most likely achieved at the farm level. The easiest way to think of this entire effort is to think of it like a scale of justice; we put our carbon footprint on one side of the scale and either attempt to reduce its weight until we achieve a balance, or we put offsets on the other side.

Before we offset, we have to measure our emissions, or carbon footprint, which is most commonly done through scope 1, 2 and 3 measurements. According to the standards outlined by the Greenhouse Gas Protocol, a widely accepted framework to measure and manage greenhouse gas emissions from private and public sector operations, "Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions."

Offsets can come in a few different shapes, but the most common at the moment is a dollar investment in a renewable energy source. Governments worldwide are moving toward an ultimate fixed dollar amount per offset, with Canada supporting $170 Canadian dollars per carbon credit by 2030. (Each carbon credit is equal to a reduction of 1 metric ton of greenhouse gases.) At present, carbon credits can be purchased for as low as $3 each from a variety of sources.

If you choose direct offsets through renewable energy generation, you'll need to find a source of renewable energy to fund—and while there are several options to do this, one of the most popular among specialty coffee professionals right now is obtaining certification from organizations already doing this work. Arcadia, a tech company empowering energy innovators and consumers to fight the climate crisis, allows buyers to purchase and retire renewable energy credits (RECs) from wind farms that directly offset their electricity use. Once an REC has been sold, it is taken off the marketplace forever, or retired and never resold. These RECs provide awards for every megawatt hour of electricity generated by wind power, which can then be purchased by interested parties, such as businesses and organizations who want to reduce their impact on climate change and improve their environmental credentials. Other agencies—including Verified Carbon Standard, also called Verra, which validates and issues Verified Carbon Units (VCUs); and the American Carbon Registry—offer similar services.

Another offset option is emerging at the coffee farm level. Gabriel Agrelli Moreira, manager of quality and market development at Daterra Coffee—a Brazilian

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B Corp and coffee farm—explained in a lecture at the Specialty Coffee Association (SCA) Expo in April 2022 that the company is already beginning to measure its carbon sinks, or anything that captures more carbon than it releases, including plants, soil, etc. Moreira said that the company is making certificates available with every purchase of its green coffee—he jokingly refers to it "like a prize in a cereal box." Daterra has other sequestration efforts underway as well, like planting 20 million native trees in Brazil, which will almost all end up being opportunities for offset purchases from the Global North.

However, it must be noted that there is a big difference in the amount of carbon captured by newly planted trees versus older trees. A recent *Guardian* article titled "World's Biggest Firms Failing Over Net Zero Claims, Research Suggests," reported that scientists claim many large companies that are using offsets to reduce their carbon footprints should be using more integral offsets, alluding that tree planting projects are not an integral source. Thomas Day of the New Climate Institute is quoted as saying, "If they insist on offsetting, at least it should be with carbon credits that have more integrity." While planting trees does, in theory, help capture or sequester carbon, it is a long process before the trees planted are mature enough to fully live up to these claims. Experts in the area of carbon sequestration believe that we should focus on protecting existing forests.

When it comes to agriculture, coffee can be one of the most sustainable crops to grow within a diverse ecosystem. Coffee farms can be started without deforestation and maintained without slash-and-burn techniques that lead to soil degradation, landslides and forest fires. Annual yields may be lower without clearing a plot of land to make more room for coffee trees, but carbon sequestration is money left on the table with the developing carbon credit market.

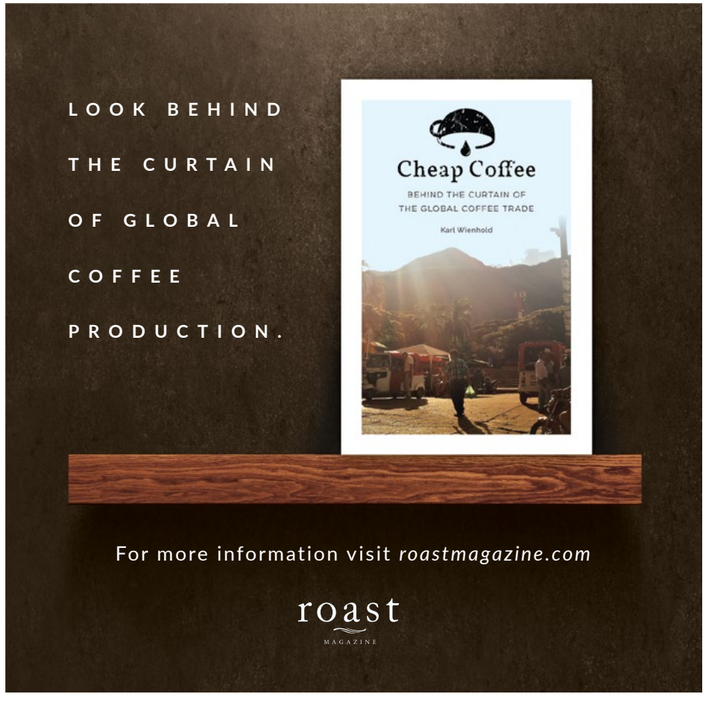
A MOVING TARGET: NET ZERO BY 2025, 2030, 2050

Anne Costello, director of green coffee at Minneapolis-based Peace Coffee and a board member of Cooperative Coffees Importer, has been working on the Carbon, Climate and Coffee (CCC) initiative, and its precursor efforts, for years. CCC is a carbon measurement and sequestration project led by Cooperative Coffees and supported by The Chain Collaborative, Root Capital and the Sustainable Food Lab. CCC has a goal of net zero by 2025, five years ahead of the B Corp 2030 goal and



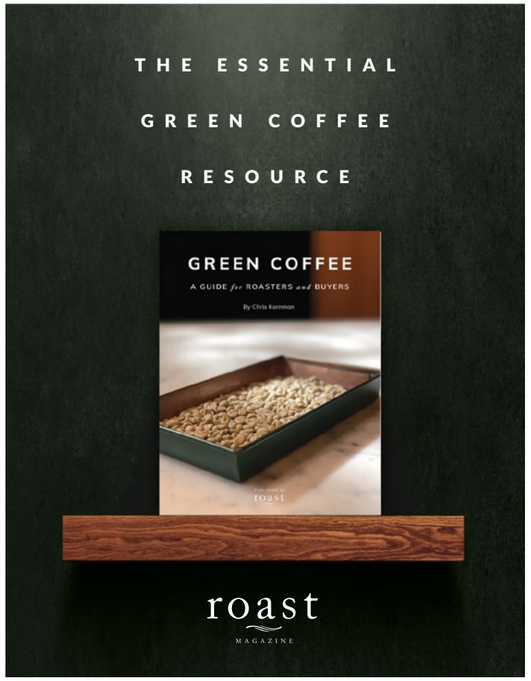
Mateo Reynoso of Manos Campesinas in Guatemala. *Photo courtesy of Cooperative Coffees*











25 years ahead of the original Paris Agreement goal of 2050. Costello explains that the project was born out of efforts to help farmers during the rust epidemic in 2012–13. During that time, Cooperative Coffees introduced and began collecting $0.05 per pound of green coffee sold for a fund to help support farmers' efforts to combat rust and replant. "We rethought how that program could work," Costello says. Since 2017, Cooperative Coffees has been collecting $0.03 per pound of green coffee sold, by members and non-members alike, to go toward its Impact Fund. The fund's main goal is to support reforestation, soil regeneration and carbon sequestration efforts, but has also been used as an emergency fund for severe weather events and covid-19 relief efforts over the years. The next step is to measure how much those environmental efforts at the farm level are impacting carbon sequestration.

The CCC initiative hopes to build on this effort by offering a carbon premium for farmers. Simply put, most carbon emissions start once the coffee leaves the farm. Many organic smallholder farmers are sequestering carbon simply by using best practices for farming and maintaining crop diversity within their coffee farms. Costello says these efforts are being measured with a sample group of 250 farmers who are using a simple smartphone form to measure their farms' sequestration. "What is kind of cool is, you can see what best practices for farmers are," Costello says. "When used properly, it is both a sequester tool and a learning tool." Once the data is validated, the importer aims to create a "carbon premium" or "environmental service premium." Think of it like a premium for organic or fair-trade coffee.

Once the data is verified from the initial group of 250 farmers, the tool can be used to scale up and effectively measure and monetize the carbon sequestration created by organic and shade-grown farming practices. This effort could effectively create a more sustainable coffee supply chain and create more equity for coffee farmers doing the work of protecting land from deforestation.

Marin Katusa, investor and author of *The Rise of America*, details some examples of emerging business models that could create carbon credits. In one example, a start-up carbon company might go to existing buildings using incandescent light bulbs and change those bulbs to LED at no cost to the owner or tenants. The company would then measure the carbon reduction, verify the results, and package the reductions into sellable carbon credits. Katusa predicts the carbon credit market will grow to be bigger than gold, oil or bitcoin.

The process for creating and selling a carbon credit is simple:

- Make a change that increases the use of clean energy or decreases deforestation, or fund/create a carbon sequestration project.
- Calculate the amount of carbon being sequestered in the project.
- Package and validate the carbon credits (through a third-party verification organization such as Verra).
- Sell the carbon credit at market value (currently based on project costs).
- Retire the carbon credit (so it can't be sold more than once).

If the CCC data finds coffee farmers are sequestering significant amounts of carbon, the next natural step would be to create carbon credits for purchase at fair-market prices. This opportunity could increase the equity in the supply chain that many specialty coffee professionals have talked about for so many years, moving back to the farm level. The question then becomes, how much will it cost a roaster-retailer to reach net zero, and will that new model be sustainable among the consumerism of the Global North?

HOW TO GET YOUR ROASTER-RETAILER TO NET ZERO

When it comes to reaching net zero, you must first measure your footprint. There are big picture carbon calculators online from sources like *carbonfund.org*, and there are many similar resources made available





Miriam Elizabeth Pérez, a producer in the Café Orgánico Marcala (COMSA) co-operative in Honduras. *Photo courtesy of Cooperative Coffees*

for B Corps from the Climate Collective network, but getting more specific to our industry is always best. Importers like Cooperative Coffees have internal calculators that take into account their own importing scope 1, 2 and 3 emissions. The easiest way to make a quick impact as a roaster is to align with importers who are already working toward these goals.

"What makes coffee so unique, and what's exciting about its carbon premiums, instead of offsetting we can actually inset. This is a huge opportunity for coffee," Costello says. She encourages roasters looking to make the leap toward net zero to find supply chains that are transparent. She defines "insetting" as when the "environmental premium goes back into our supply chain." As an example of a possible inset opportunity in Cooperative Coffees' supply chain, she says, carbon credits could go toward providing funding to the Centers of Excellence in Pangoa Co-op in Peru, a centralized organic training center for farmers. Daterra Coffee is also considering using its future carbon credit sales to fund education centers and further reforestation efforts, essentially turning its offsets into insets.

If your company is an existing B Corp, there are many resources available to help you reach net zero by 2030, including the B Climate Tools Base, as well as resources for marketing your plan and accessing fellow B Corps who are happy to share their experiences and services. My initial findings within the B Corp network were not immediately helpful for coffee-specific businesses, but many calculators and consultants exist that can help you address your company's needs. B Lab, the nonprofit that operates the B Corp program, was not available for an interview for this article, but a representative from the organization shared that some changes to the net zero program are in development.

If your company is not a B Corp, there are still many resources available to help you bring your roasting operations to net zero. The best course of action is to keep it simple. Measure your emissions (start simple with scope 1); make a plan to reduce as much as possible without offsets; then find and invest in reputable carbon credits, preferably from programs that inset back into the coffee supply stream.

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