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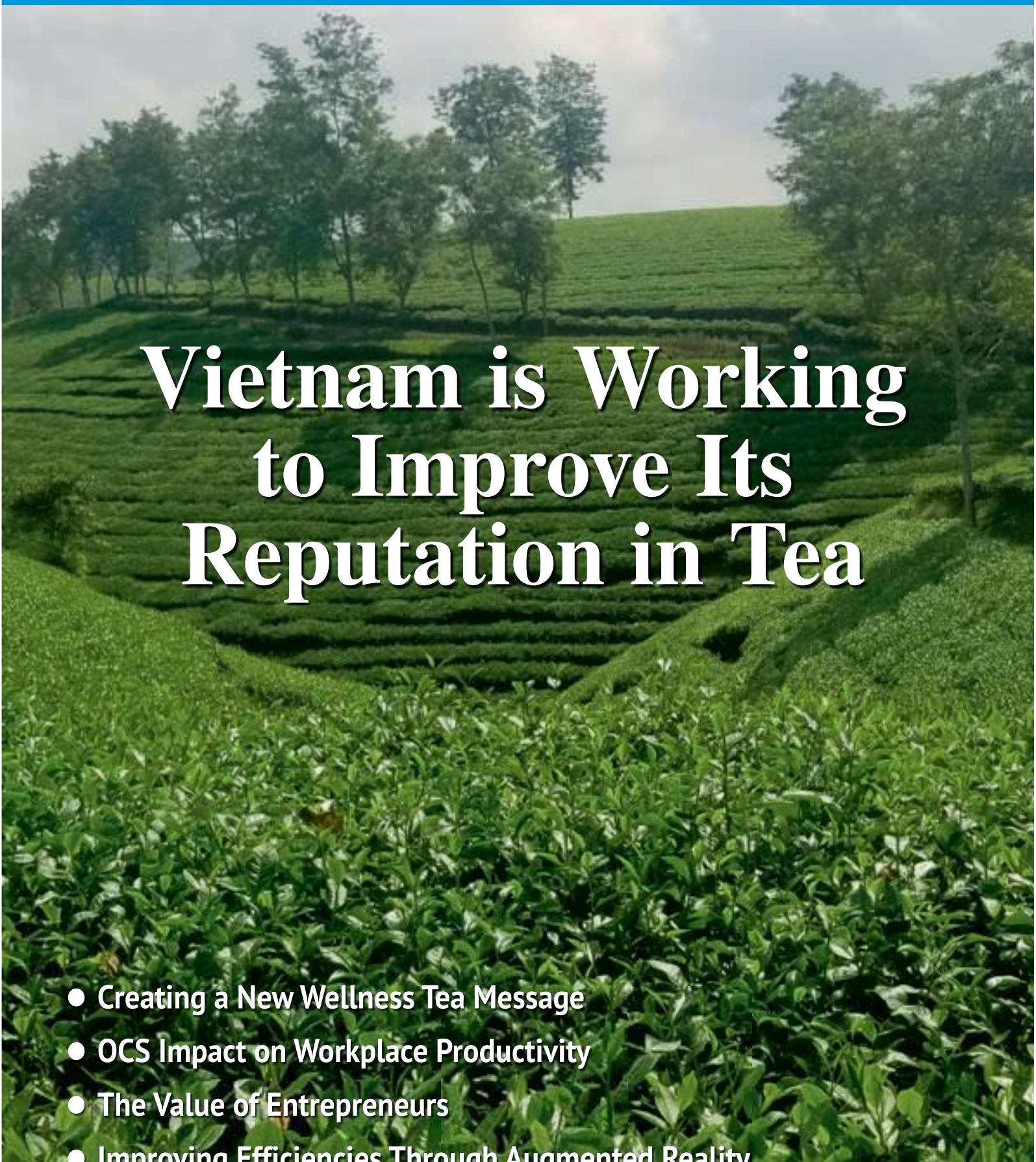

Vietnam is Working to Improve Its Reputation in Tea

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Carbon Neutral Coffee in Costa Rica

While many coffee producers are still struggling to implement sustainable practices, smallholder producers in the Coopedota cooperative in Costa Rica have been producing certified carbon neutral coffee for nearly a decade.

Coffee production's environmental sustainability can be measured using many metrics, from plant and animal species counts to assess biodiversity to tracking the absence of chemicals in organic systems. Calculating the total carbon dioxide and greenhouse gas emissions involved in producing a product, also called the carbon footprint, is another dimension by which to calculate coffee production's overall environmental impact and ability to be sustained long term.

Both organizations and products can be certified carbon neutral. Product certification analyses the full lifecycle of the product, taking into consideration all emissions associated with the raw material and the process to transform it into the final product. Coopedota, a cooperative of 900 smallholder producers in Santa Maria de Dota, Costa Rica, has been producing certified carbon neutral coffee since 2011.

"Certification of Coopedota's coffee as carbon neutral has impacted us positively in environmental aspects as much as in internal management," said Monserrat Hernandez, communications manager for Coopedota. "By starting the process of quantifying emissions and knowing which were the processes where we have the capacity to improve by reducing our footprint, this helps us improve all stages of production, processing, and commercialising coffee."

Carbon neutral certification begins with measuring the overall carbon footprint of the lifecycle behind coffee's production.

Carbon neutral certification begins with measuring the overall carbon footprint of the lifecycle behind coffee's production. Greenhouse gas emissions generated by coffee production include those from fertilizers, herbicides, and pesticides; fuel used for transportation; electricity to run processing equipment; and the decomposition of by-products. After knowing where emissions occur, and which steps are the highest emitters, the next step is to then eliminate and reduce emissions where possible.

The Value of Carbon Neutral

At Coopedota, after the initial measurements in 2011 to begin the certification process, the cooperative began reducing emissions related to fuel usage, treatment of post-processing coffee pulp, treatment of post-processing wastewater, reduction and efficiency of electricity consumption, and overall waste management. These changes became the new baseline operations for the cooperative, which operates a wet mill, dry mill and warehouse at its central facility in Santa Maria de Dota.

(Left) Coffee seedlings at the Coopedota nursery. (Below) Carbon neutral certifications.

Because so much of coffee's physical transformation – from ripe, freshly harvested cherry to green exportable bean – takes place under Coopedota's roof, it is well positioned to reduce and offset carbon emissions for a major portion of the production chain. Whereas it would have been difficult for the 900 member producers to each implement emissions reductions at their own mills, the cooperative, as a whole, significantly lowered its emissions by streamlining the practices at one shared facility.

The emissions remaining after reduction at each of these stages are then offset by compensation through the purchase of carbon credits to arrive at a final zero emissions balance. This is what is meant by neutrality; any emissions resulting from the product's lifecycle are compensated by greenhouse gas emissions capture elsewhere. One example of a coffee agroforestry production system that generates carbon credits for sale was covered in the four-part series on sustainable production in Peru in *Tea & Coffee Trade Journal* over the course of 2018.

"In our case, we buy carbon credits on the international market as a method of validated compensation," Hernandez explained. "On average, 1500 tonnes of carbon were compensated each year from 2011 through to today." Coopedota has a history of investing in sustainability, beginning with reduced water usage and the elimination of discharging mucilage-contaminated water to rivers in 2001. The co-op began using coffee parchment instead of firewood for coffee drying in 2002, and in 2004 installed a micromill within the larger existing infrastructure to more efficiently process smaller volumes outside the peak harvest.

Buyers have responded positively to Coopedota's carbon neutral certification. Hernandez noted that, "Our clients see us as a cooperative of quality coffee producers from the member-owned farms until the coffee arrives in their hands," said Hernandez. Certifying the greenhouse gas emissions neutrality of the coffee only improves its quality by demonstrating producers' collective environmental commitment. "Carbon neutral certification converts itself into added value for our buyers of green coffee and into a differentiating factor in the sale of roasted and packaged Coopedota coffee," he said.

Coopedota's roasted coffee products, sold locally, are also certified carbon neutral, an important step as coffee consumption in Costa Rica continues to increase. As producers are often those first impacted by extreme weather events and changes in climate, it stands to reason that producer groups are leading the effort to build awareness of coffee's carbon footprint, and building a method to neutralise it, into links of the supply chain for which they are responsible.

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