

BRIEF SERIES: VIET NAM

From driver to solution: coffee agroforestry in Viet Nam



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Viet Nam's capital city of Ha Noi is famous for its coffee culture and numerous coffee shops that cater to locals and tourists alike.

Globally, we drink over 500 billion cups of coffee every year. Most consumers are unaware of where the coffee in their cups comes from. If pushed, Columbia may come to mind. While 67 percent of the world's coffee is grown in Latin America, Viet Nam is in fact the second biggest coffee producer and exporter (after Brazil). Production in Viet Nam has steadily increased from 78,600 tons in 1990 to almost 1.77 million tons in 2017/18. Between 1990 and 2000, the area for coffee plantations grew ten-fold from 50,000 to 500,000 ha (mainly in the Central Highlands).



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Coffee has almost completely taken over a once heavily forested mountainous area in Dak Lak province, Viet Nam.

There is no doubt that coffee is a significant contributor to Viet Nam's rural economy. Its export value in 2018 was [US\\$3.5 billion](#). Its share of gross domestic product is around 2 percent. Viet Nam takes its coffee production seriously. In 2016, the Government designated 10 December as the country's [National Coffee Day](#).

While coffee in Viet Nam has been touted as a success story, there is also a downside to the considerable expansion of its production. The conversion of natural forests to coffee contributes significantly to greenhouse gas (GHG) emissions, and thereby to global climate change. Today, coffee covers an area of about 650,000 ha. A continuation of this trend will make it more difficult to achieve the target of reducing GHG emissions by 8 percent by 2030, which is [Viet Nam's commitment to the United Nations Framework Convention on Climate Change \(UNFCCC\)](#).



When the UN-REDD Viet Nam Phase II Programme selected Lam Dong province (in the Central Highlands region) as one of its pilot provinces, the coffee sector as a driver of deforestation was squarely in mind. Turning this driver into a REDD+ potential would require addressing the carbon as well as the socio-political challenge revolving around forestland tenure. The Programme reviewed options for forest restoration by intercropping forest trees and examined opportunities for and constraints to the adoption of coffee agroforestry in Lam Dong province, where coffee is grown on about [162,000 ha](#). The Ministry of Agriculture and Rural Development (MARD) is also acutely aware that actions to reduce emissions from industrial crop production (not just coffee) can be viewed "as a threat to these industries and the socio-economic development they sustain". It is clear to all stakeholders involved that any measures to reduce deforestation have to simultaneously promote greater sustainability, offer suitable responses to climate change and improve farmers' incomes.



The carbon challenge: what can agroforestry offer?

The Center for Agroforestry (ICRAF) [defines](#) agroforestry as the integration of trees into farms and identifies it as a potentially significant contributor to climate change mitigation and adaptation goals, while simultaneously improving livelihoods and restoring landscapes.

Agroforestry for coffee has been piloted in Viet Nam for decades, and reportedly covers about [260,000 ha](#) already. Still, agroforestry practices are not considered to have been successfully mainstreamed, and upscaling remains a challenge.

In the Southeast and Central Highlands regions, the estimated carbon storage of robusta and arabica coffee agroforestry systems ranges from 5.8 to 10.4 tons/ha, depending on shade tree species and density. [Recent research by ICRAF](#) has highlighted that introducing agroforestry on a further 400,000 ha of current monoculture coffee could sequester an additional 20 to 40 million tons of carbon, both above and below ground. Nitrogen-fixing trees in agroforestry systems can also reduce GHG emissions by limiting the dependence on inorganic fertilizers. From a climate mitigation perspective this looks rather promising.

In recent years, [MARD has already introduced](#) other industrial crops as shade trees, such as fruit trees,



What agroforestry can do for coffee

- Can fix 2 to 10 times more carbon in biomass and soil per hectare than coffee monoculture;
- Improves quality of beans owing to longer maturing process, higher soil fertility and water retention; and
- Shade trees increase resilience to water and temperature stresses, some pests and diseases.

avocado, durian and macadamia in coffee plantations or gardens. This diversifies production, creates more jobs, reduces price risks and market fluctuations and ultimately enhances incomes. Beyond providing shade, trees act as windbreaks, limit evaporation and contribute to moisture retention. This is particularly important in the context of climate change adaptation. In recent years, over 100,000 ha of such diversified farms have been developed, mostly in the Central Highlands. And farmers are well aware of the economic and environmental benefits.

Yet, besides the deep knowledge of the benefits of agroforestry there is also limited experience and knowledge on the impact of shade trees on coffee quality and coffee yield. Selection of tree species is often determined by accessibility. Farmers living near main roads tend to plant more commercial fruit trees while farmers living in less accessible areas prefer timber trees. In the Central Highlands, provincial authorities recommend integrating indigenous timber species in coffee plantations and support the provision of seedlings.



Forestland Tenure: Addressing a key challenge

The deeper-rooted challenge for coffee to make the shift from deforestation driver to solution is a socio-political issue revolving around tenure and legality of coffee grown on forestland. The historical legacy of many coffee growing communities in the Central Highlands is closely intertwined with migration and new settlements since the 1960s. This means that many of the smallholder coffee plantations were established through burning and converting natural forests – including protection forests. This makes these coffee plantations or farms ineligible for most sustainable coffee certification schemes. But, illegal or unsustainable is far from the impression one would gain upon learning about the efforts being taken together with the local authorities to make coffee production more sustainable.

As a solution to the tenure security, through long dialogue and lobbying, the Government of Vietnam issued Decree No. 168 in 2016, which allows for long-term use contracts to be signed between State forest managers and other parties for management and use of forestlands. This decree recognizes the limitations of earlier contract arrangements which treated contractors as labor force in State-managed forests. Under the new decree, greater rights are rendered to contractors for forests and forestland resources for 20 years with the possibility of extension.

The full implementation of Decree No. 168 and close collaboration between coffee growers and local authorities are expected to lead to sustainable production. Coffee agroforestry would not only reduce GHG emissions, but also enhance coffee's resilience to a changing climate and secure better livelihoods. A final sweetener would be that more diverse agroforestry systems increase bee populations, which [might mean more and heavier fruits, and greater yields](#). Concerted efforts to make all of this reality are underway.





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