



BRAZIL

Climate change threatens to disrupt coffee production in Brazil, but by maintaining coffee farms, applying agroforestry practices and renovating smallholder areas the country can ensure coffee drives economic development and climate mitigation.

Brazil produces over a quarter of the world's coffee. The country has increased production while decreasing the total land used for coffee production. The coffee area harvested has declined by over 285,000 hectares over the past 5 years. If this trend continues and coffee transitions to pasture or row crops Brazil stands to lose a significant stock of carbon. By maintaining coffee and/or transitioning to other tree crops, Brazil can ensure the continued storage of this carbon.

IMPORTANCE



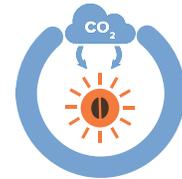
Total coffee production for Brazil
2,680,515* MT/YR

Brazil
PRODUCES
29% of global coffee production

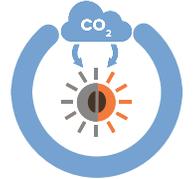


Area harvested
1.8 M HA

Decline of over
280,000 HA/YR



20,171,743 MT of carbon stored in full sun coffee (est.)

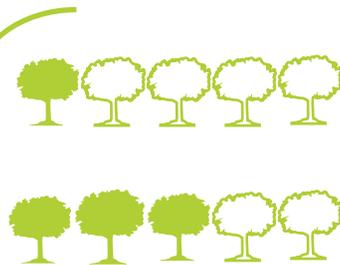


3,395,414 MT of carbon stored in low shade coffee (est.)

SUITABILITY



Decline in suitable area by **2050**



26% Suitable area that was forest in **2010**

60% Suitable area that is forest in **2050**

Climate projections estimate that the total suitable area for coffee in Brazil will decline by 61% by 2050. Over a fourth of the suitable area is forest and only 8% of this is currently protected.

Fortunately, Brazil is only using 2% of the total suitable area today to grow coffee and this is unlikely to increase beyond 4% over the next 30 years. Thus, Brazil should be able to maintain coffee production without needing to expand into forests. To do this, the country will need to invest in smallholder renovation, which has the potential to increase production by up to 271,000 MT.

RENOVATION



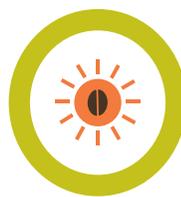
271,704 ha Smallholder renovation need



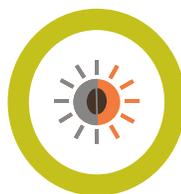
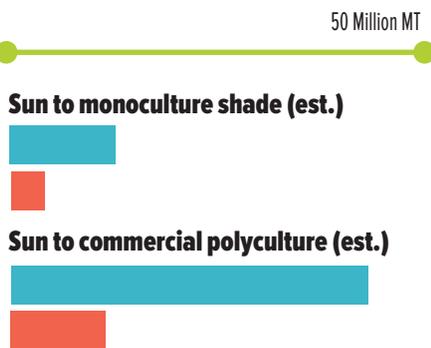
81,511 HA Potential land spared

13,449,371 TONS Potential carbon emissions avoided

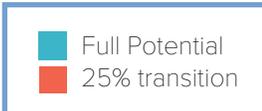
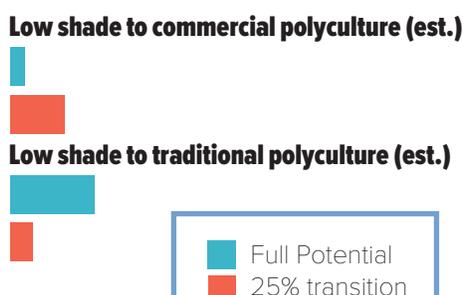
CARBON OPPORTUNITIES



89% of Brazil's production is in full sun



11% of Brazil's production is in low/scant shade systems



An estimated 23M tons of carbon are currently stored within in Brazil's coffee farms. Transitioning to agroforestry practices on coffee farms could store an additional 12M-43M tons of carbon within coffee fields and buffer coffee from higher temperatures and stronger rainfall. These systems must be designed to optimize coffee productivity. The graphs to the left show two scenarios for increasing shade levels on coffee farms. The blue line represents the total potential, the red 25% transition. In addition to these shade scenarios farmers could also increase tree cover through live fencing, windbreaks and restoration of riparian buffer zones.

* Based on 2017 FAO Data

Definitions

Diverse shade has a closed or nearly closed canopy (more than 40% cover), with 10 or more species of shade trees.

Scant shade has a minimal but existing canopy (1%–40% cover) and usually 1 or 2 species of shade trees (all with fewer than 10 species).

Sun coffee has no shade or shade trees in the production area. (Jha et al 2014)