



Is Your Coffee Made in the Shade?

Around the world, people enjoy drinking coffee. In the United States alone, 54 percent of adults drink coffee every day, at an average of 3 cups per day. Worldwide, people buy 7.7 billion kilograms (16.9 billion pounds) of coffee beans each year. In short, coffee is an important part of many people's lives. But have you ever thought about where your coffee comes from?

Coffee beans come from several species of shrubs that historically grew in Ethiopia under the shade of the tropical rainforest canopy. In the fifteenth century, coffee was brought to the Middle East and eventually spread throughout the world. Because of its popularity, coffee is now farmed in many places around the world, including South America, Africa, and Southeast Asia.

As farmers began cultivating coffee, they grew it like many other crops by clearing large areas of rainforest and planting coffee bushes close together in large open fields. Because the coffee plant's native habitat is a shady forest, coffee farmers found that they had to construct shade over the plants to prevent them from becoming sunburned in the intense tropical sunlight.

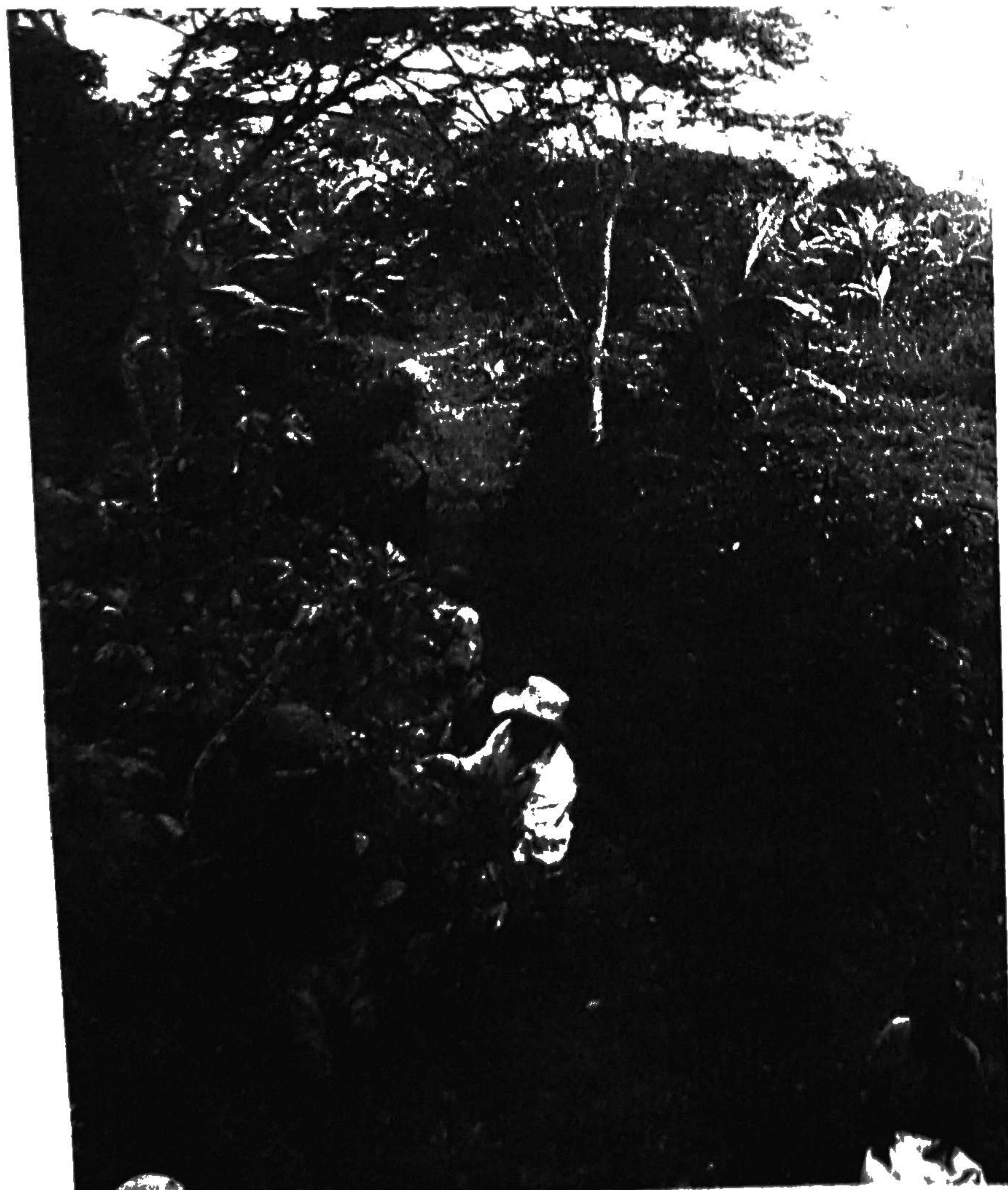
Over the past several decades, however, breeders have developed more sunlight-tolerant plants that cannot only handle intense sunlight but can also produce many more coffee beans per plant.

As coffee was transformed from a plant that was naturally scattered throughout a diverse rainforest to one that was grown as a single species in large numbers in open fields, the coffee fields became attractive targets for insect pests and diseases. Farmers have applied a variety of pesticides to combat these pests, which has increased the cost of farming coffee, poisoned workers, and polluted the environment. Given the world's demand for coffee, what other options do coffee farmers have?

Some coffee farmers thought back to the natural environment in which coffee grows and wondered if they could farm coffee under more natural conditions. Such coffee, called shade-grown coffee, is grown in one of three ways: by planting coffee bushes in an intact rainforest, by planting the bushes in a rainforest that has had some of the trees removed, or by planting the bushes in a field alongside trees that produce other

marketable products, including fruit. Coffee bushes grown in this way attract fewer pests, so less money is needed to buy and apply pesticide, and there is less risk to workers and the nearby soil and water. Using these methods, coffee can be grown while still preserving some of the plant diversity of the rainforest. And the coffee often tastes better. The density of coffee plants is lower in these more diverse landscapes, however, which means that only about one-third as much coffee is produced per hectare. So, while there are cost savings, the yield is lower. Economically, this means that owners of shade-grown coffee farms need to charge higher prices to match the profits of other farms.

How can farmers producing shade-grown coffee stay in business? A number of environmental groups that want to preserve biodiversity in tropical rainforests have stepped in to help. Researchers found that shade-grown coffee farms provided habitat for approximately 150 species of rainforest birds, whereas open-field coffee farms provided habitat for only 20 to 50 bird species. Not surprisingly, researchers also found that other groups of animals were more diverse on shade-grown coffee farms. In response to these findings, the Smithsonian Migratory Bird Center in Washington, D.C., developed a program to offer a "Bird Friendly" seal of approval to coffee farmers who were producing shade-grown coffee. Combined with an advertising campaign that explained the positive effects of



Shade-grown coffee in Honduras. Coffee grown in the shade requires less pesticide, helps to preserve the plant diversity of the rainforest, and even tastes better. (AP Photo/Ginnette Riquelme)



A bird-friendly certification label. Bird-friendly labels were introduced by the Smithsonian Migratory Bird Center to inform consumers that the coffee was grown in the shade in a manner that improves bird habitat. (Francesca Slater)

shade-grown coffee on biodiversity, this seal of approval alerted consumers to make a conscious choice about the impact that their favorite beverage was having on rainforests. From 2005 to 2011, the sales of the shade-grown coffee with the Smithsonian seal of approval increased by an amazing 250 percent. The Arbor Day Foundation, an environmental organization that promotes the planting of trees, joined the effort by selling its own brand of shade-grown coffee. Over the past 20 years, it has become clear that when consumers are informed about how coffee is grown, many people are willing to choose the shade-grown varieties, even if it requires spending more money to reduce adverse impacts on the tropical rainforest biome.

Critical Thinking Questions

1. If shade-grown coffee produces less coffee per hectare, what economic factor might prevent all coffee from being grown this way?
2. If three times as much coffee can be grown in the Sun than in the shade, what are the trade offs in terms of the amount of land used for growing coffee under these two alternative agricultural practices?

References

- Philpott, S. M., et al. 2008. Biodiversity loss in Latin American coffee landscapes: Review of the evidence on ants, birds, and trees. *Conservation Biology* 22:1093–1105.
- Smithsonian Migratory Bird Center. *Coffee Drinkers and Bird Lovers*. <http://nationalzoo.si.edu/SCBI/MigratoryBirds/Coffee/lover.cfm>.