The Environmental Impact of Coffee

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Abstract

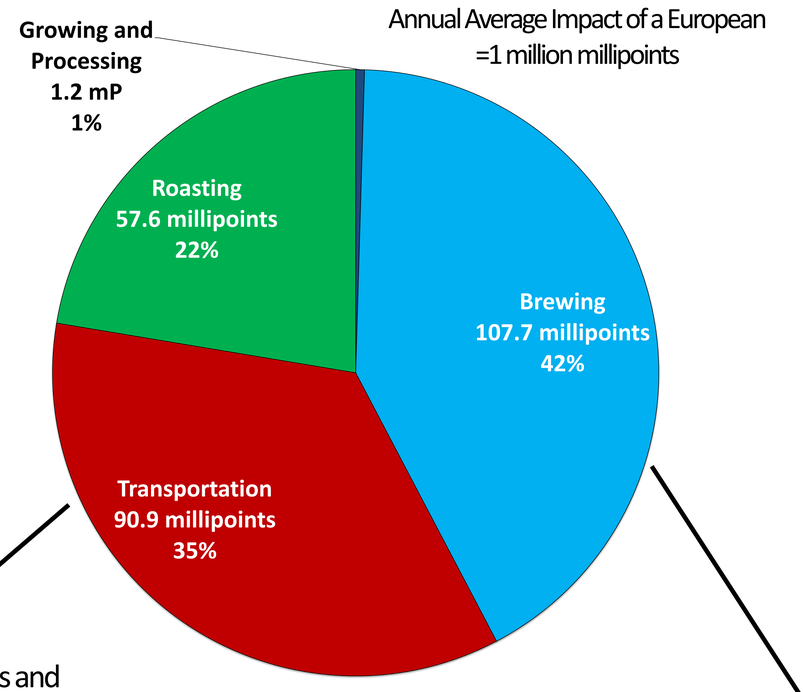
A Life Cycle Assessment(LCA) was performed of coffee production and consumption. The analysis of these results, generated using the Eco-Indicator 99 LCA tool, showed that the majority of the impact in production of coffee occurred during transportation. When compared to the impact due to other coffee processes such as roasting and brewing coffee as espresso, it was determined that the farming of coffee is a small percentage of the overall impact.

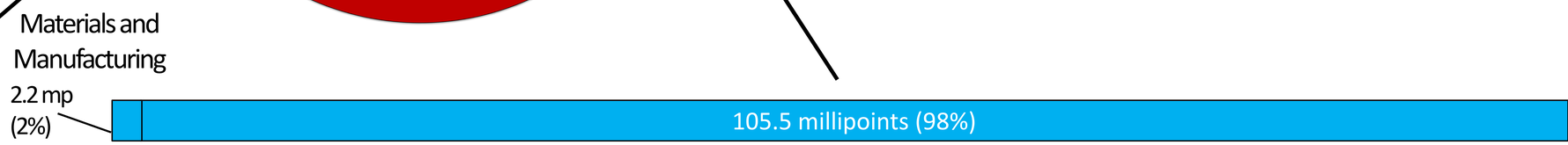
Finca Vista Hermosa is a sustainability minded coffee farm in Guatemala.

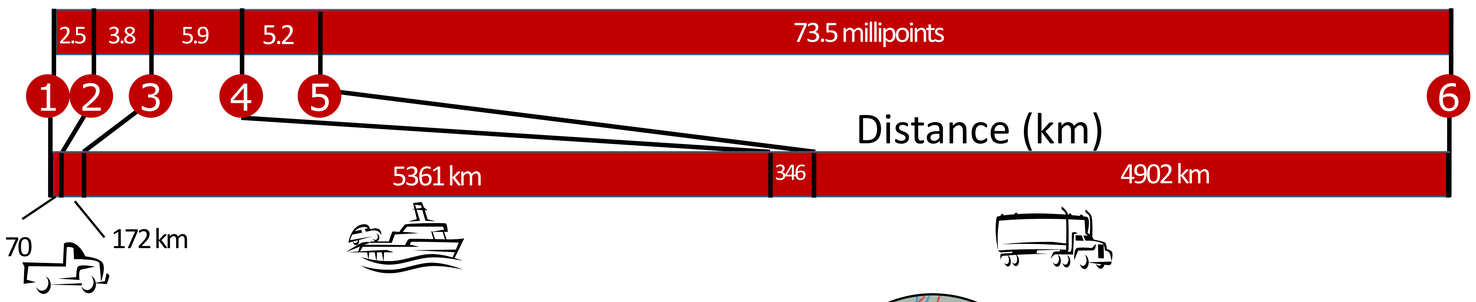
By The Numbers

- Annual Production- ~40,000 kg
- 27,000 trees
- Coffee Tree Age- 30-55 Years
- Pesticide/Fungicide Usage- None
- Fertilizer- Offset 30% by reusing coffee cherry waste

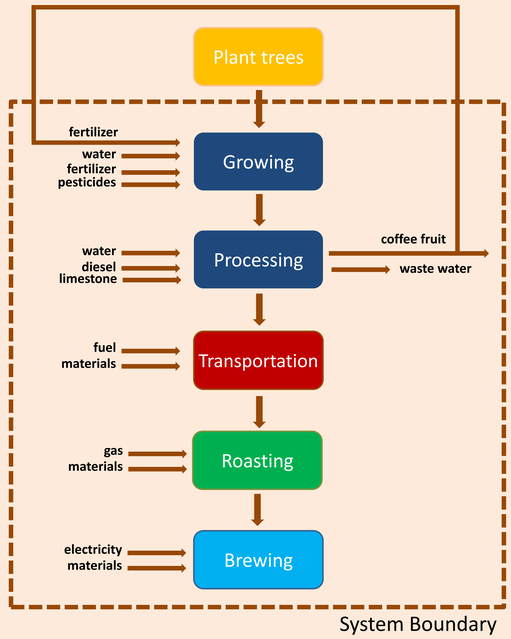
Overall Environmental Impact (1kg Green Coffee)



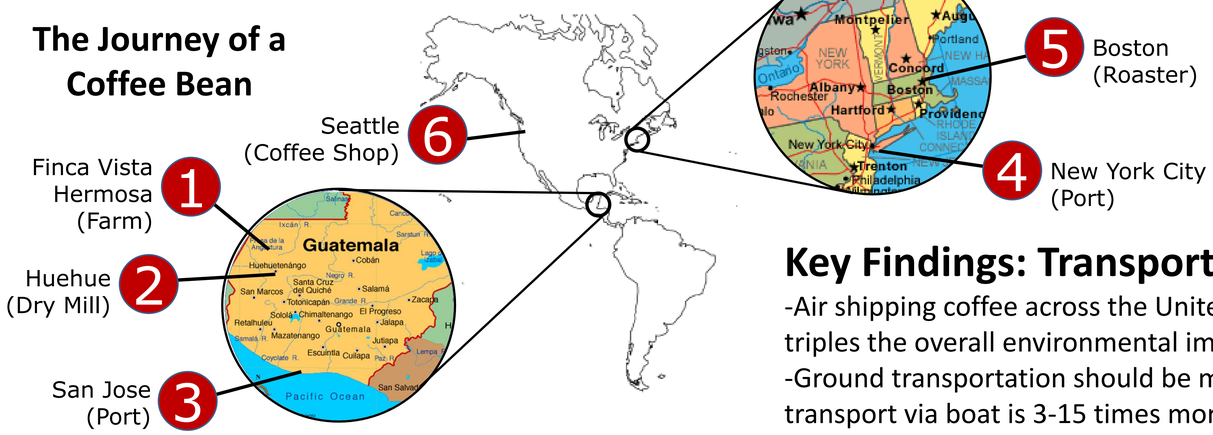




System Map



The Journey of a Coffee Bean



Key Findings: Transport

-Air shipping coffee across the United States triples the overall environmental impact.
-Ground transportation should be minimized as transport via boat is 3-15 times more efficient.

Key Findings: Brewing

-Commercial espresso machines are often inefficient. At least 50% of the daily power use is due to heat loss.
-Most commercial espresso machines are left on 24 hours per day.
-Over its 10 year life, an espresso machine will cost $15,000 in electricity– as much as the machine itself.

Conclusion

More than 95% of the environmental impact of coffee occurs in the country of consumption, where 98% of the economic value of coffee is realized.

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