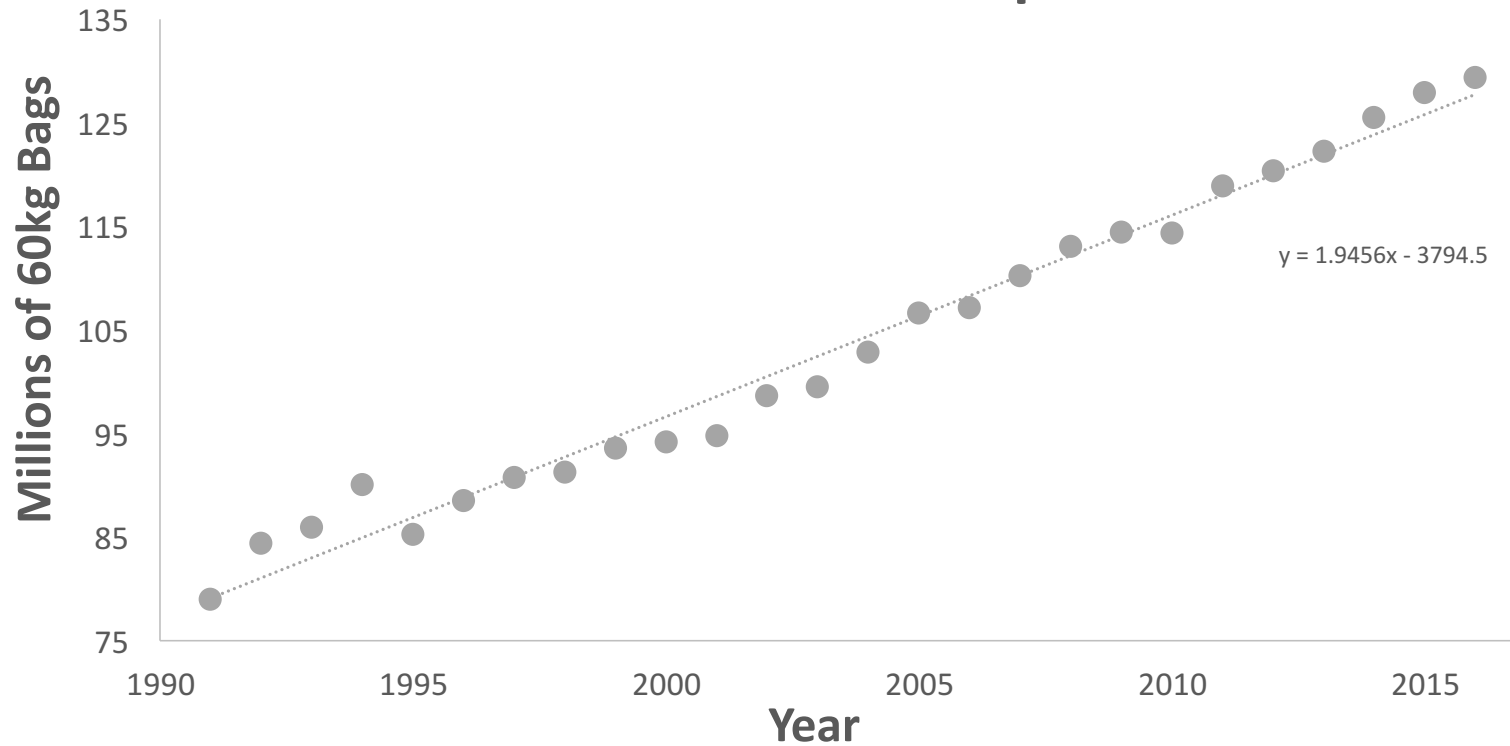


Our Coffee Conundrum: The Socio-Environmental Issues of our Cultural Addiction



Global Coffee Consumption



#2 Traded Commodity Globally

Who is consuming this coffee?

Who & where is it produced?

Coffee Plant – Family Rubiaceae (Genus *Coffea*)

- Evergreen Perennial
- Understory shrub
- Grows ~ 10 ft tall

Coffee Beans

- seeds from coffee fruit (cherry)



Coffee plants produce phytochemicals as defense against herbivores

- Caffeine
 - Chlorogenic acid
- } Bitter flavor provides protection

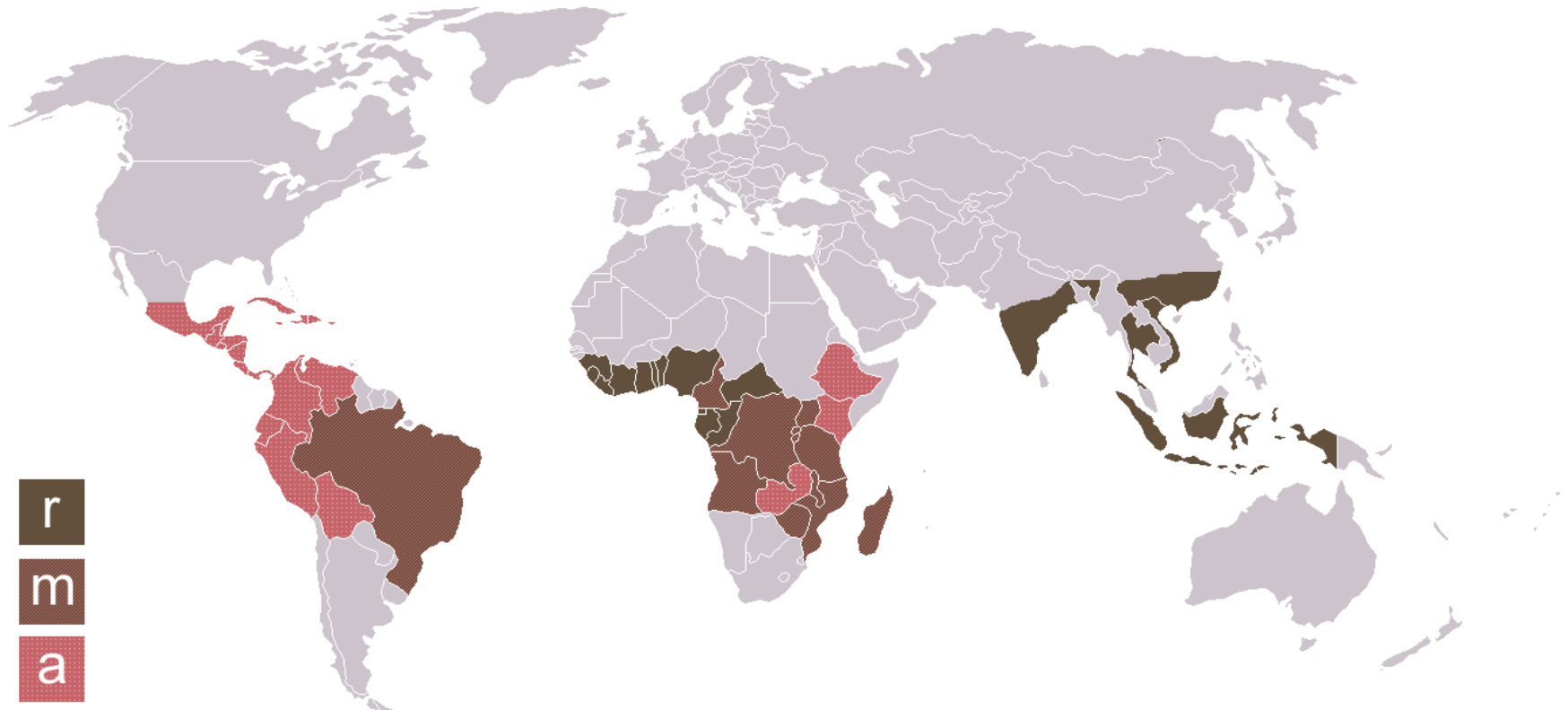
Different varieties have different levels of phytochemicals

Table 1. Ideal Growing Conditions Arabica and Robusta Coffee Plants

Factor	Arabica	Robusta
Temperature (°C)	15-24	18 – 36
Precipitation (mm)	1200 – 2200	2200 – 3000
Altitude (ft)	1800 – 3600	0 – 3000
Light Environment	Shaded	Sun



Coffee is grown around the world in narrow region around the equator called the “Coffee Belt”



Currently, 80% of coffee production is Arabica. The number of farms across the world using Robusta is increasing.
-Robusta is generally heartier and yields more fruit than Arabica.

Coffee Agriculture



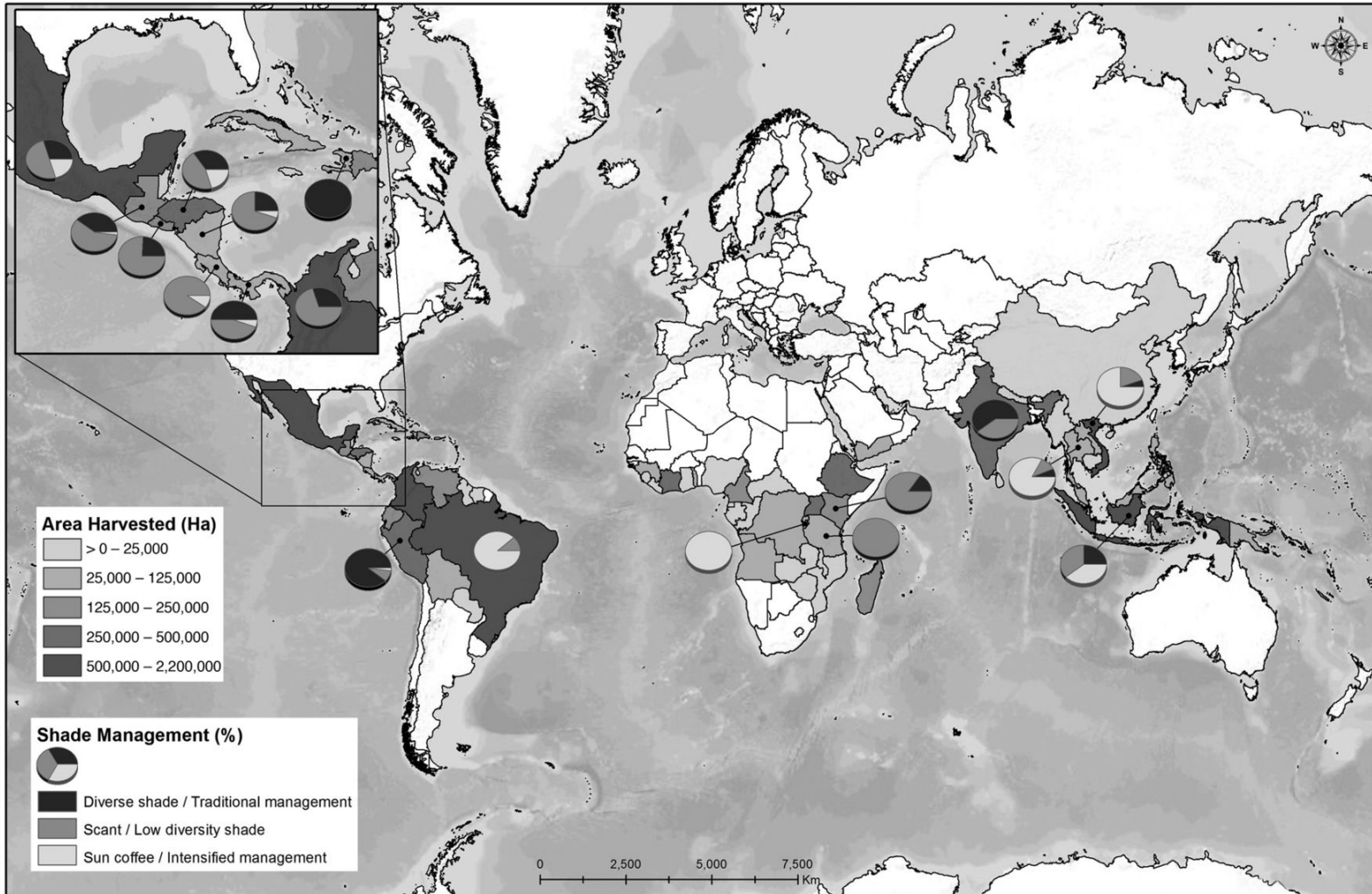
Shade-Grown Coffee
(Traditional Method)



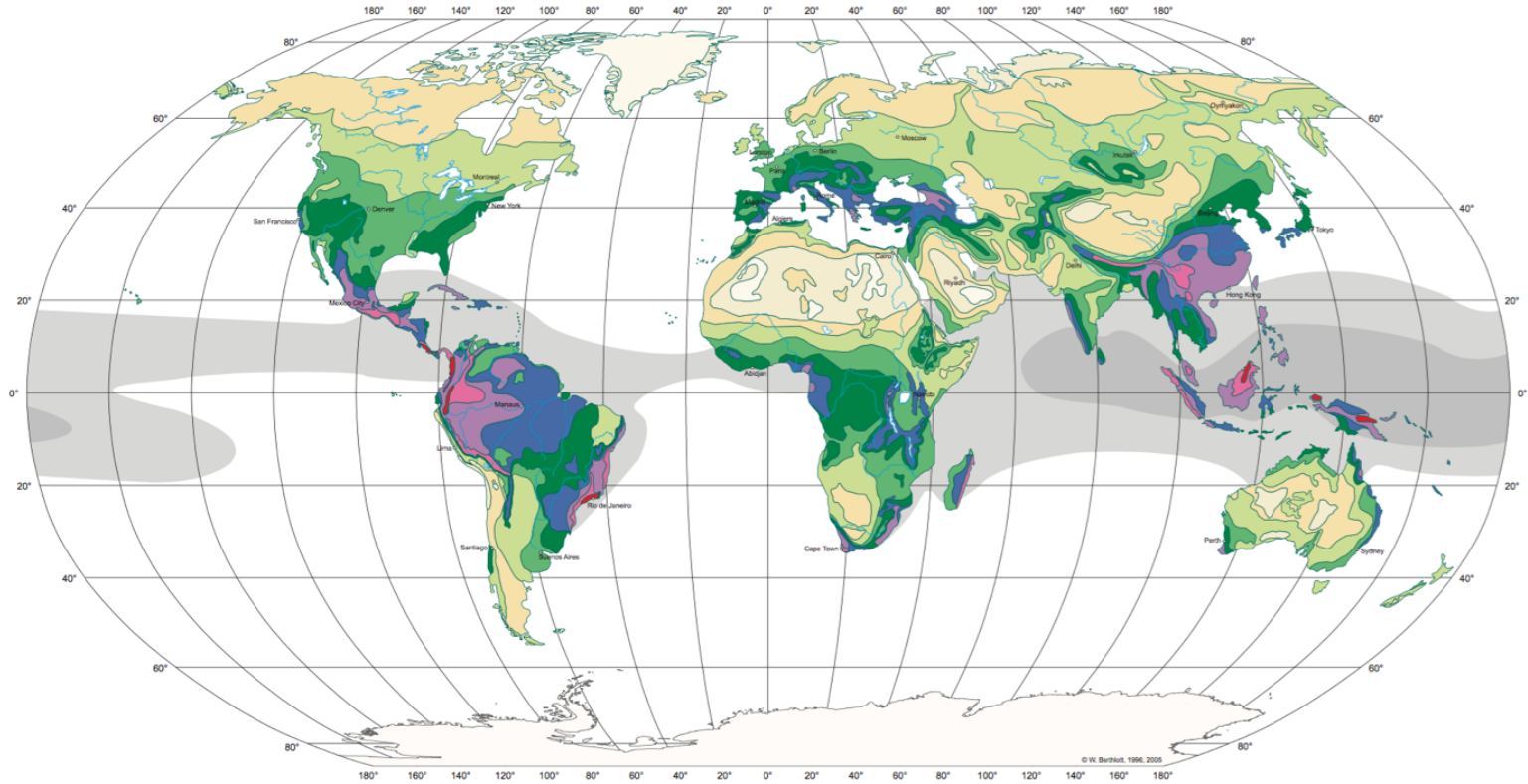
Sun-Grown Coffee
(Intensive Method)

Explore the implications of this shift in this case study?

Harvested areas of coffee

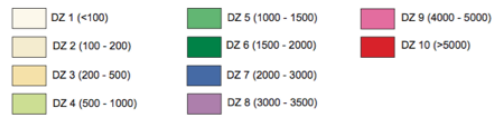


GLOBAL BIODIVERSITY: SPECIES NUMBER OF VASCULAR PLANTS



Robinson Projection
Standard Lines 38°N and 38°S

Diversity Zones (DZ): Number of species per 10 000 km²



sea surface temperature

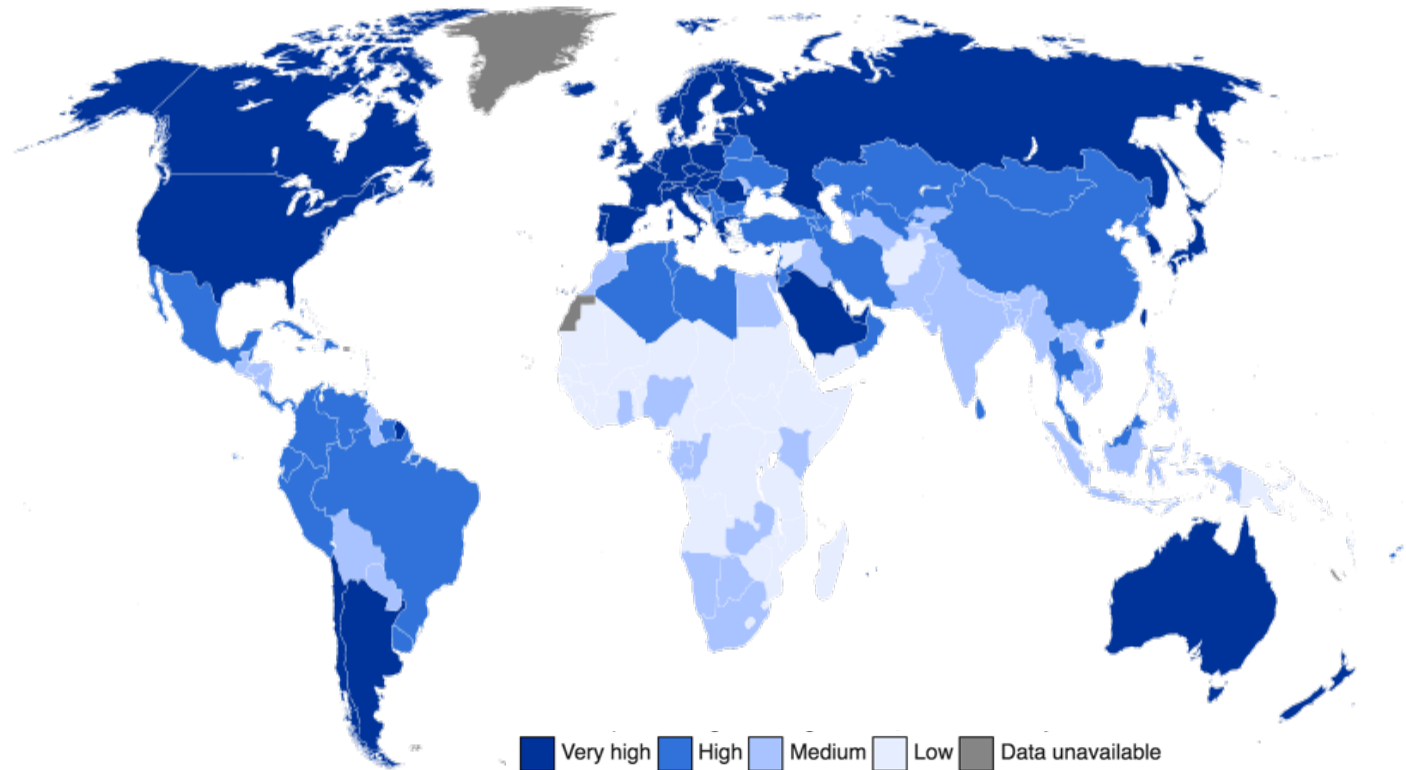


W. Barthlott, G. Kier, H. Krefl, W. Küper,
D. Rafiqpoor & J. Mutke 2005
modified after
W. Barthlott, W. Lauer & A. Placke 1996
Nees Institute for Biodiversity of Plants
University of Bonn

Did you see any patterns
that might concern you?

Social Costs of Coffee?

Human Development Index - 2016

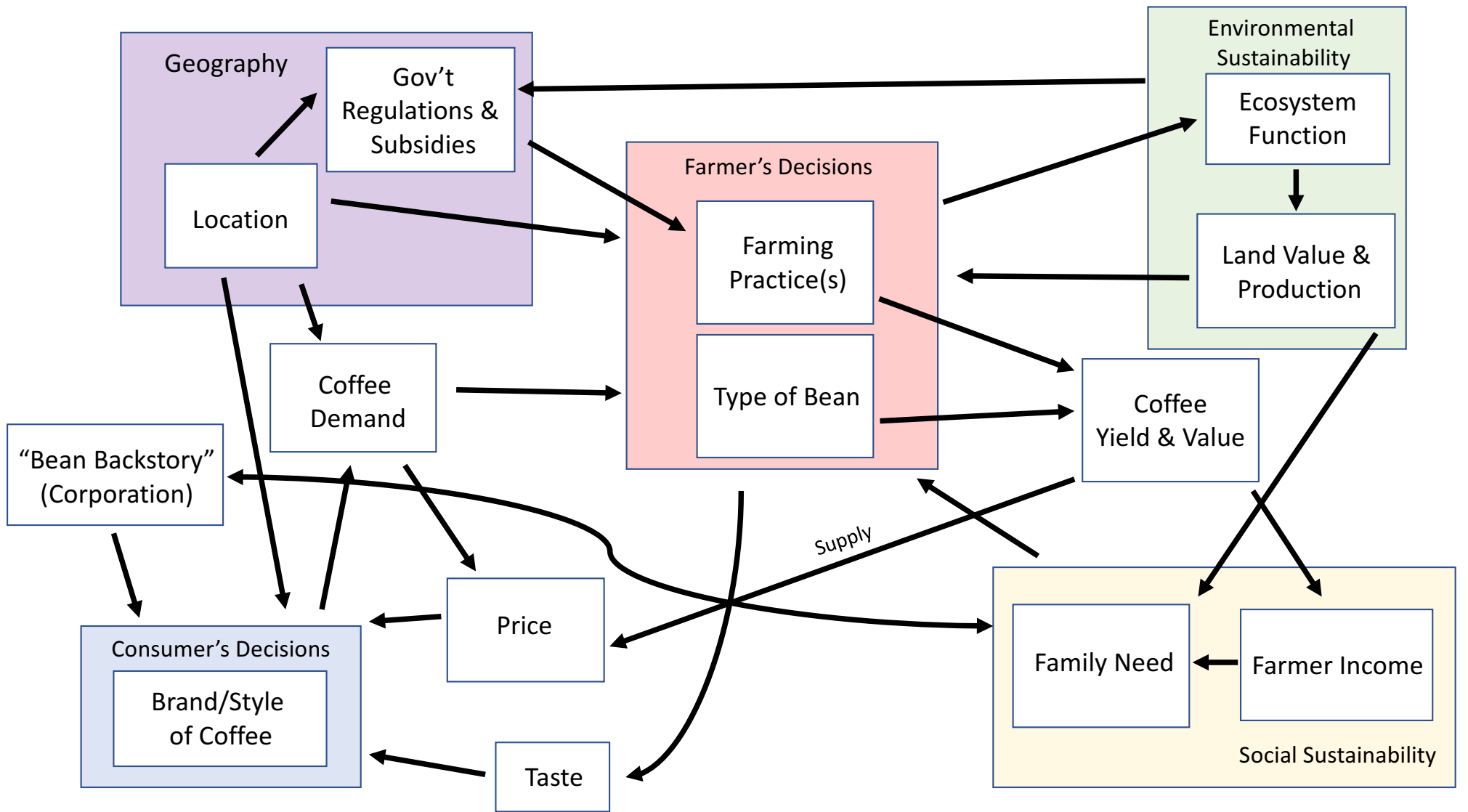


Current coffee prices only pay farmers \$1.28 / LB

- 8 cents more than price in 1983

- Given inflation, prices should be ~ \$3.00

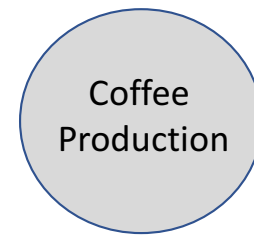
Video Link: <https://vimeo.com/196448366>



Effects of Coffee Concept Map



Ecological Issues



Social Issues