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Session 2C Shade Grown Coffee In Costa Rica

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Shade-Grown Coffee in Costa Rica: A Reminder to Consume & Produce Responsibly

A Research Poster by Jenna Lentz

Introduction: What is Shade-Grown Coffee?

Shade grown coffee utilizes a variety of heights and types of leafy trees. Coffee in Costa Rica has been a prime export that generates revenue for the country. With high demand, implementing agricultural methods that maximize crop harvest is essential. As climate change continues to impact industries internationally, the need for sustainable methods is also becoming increasingly essential.

In Central America, coffee is grown two ways. Technified coffee plantations that use sunlight to grow, pesticides to maintain, and machines to harvest the coffee crop dominate the industry. The other method used is shade farming that closely resembles how coffee was grown naturally before colonization. Shade-grown coffee is a simplified term for agroforestry, when broken down means agriculture within forests.

Coffee plants are grown alongside large, shade producing plants that not only provide protection for the berries, but also increase biodiversity that directly benefits the ecosystem. It creates an environment that is ecologically diverse *and* sustainable. Birds are able to mitigate pests and other infectious insects, debris from shade plants act as natural fertilizers, and berries are hand-picked at peak ripeness for high quality product (Lee 2009).

Agroforestry systems produce quality crop, provide conservation benefits, and provide economic benefits to growers (Rodewald 2016).

Benefits: Why Shade-Grown COffee?

Livelihood Benefits

· Produces additional resources that can be exported to generate additional sources of income for farmers, such as wood, fruit, etc.

· Reduces production and processing costs. Trees provide natural protection by creating a barrier and by attracting wildlife that deters pests and decreases the use of pesticides & harsh chemicals.

· Increases productivity in the long-run. Coffee plants grown under shade canopies tend to have longer lifespans than those plants exposed to constant sunlight.

· Quality of coffee harvested improves, allowing farmers to market their products at premium prices and thus earns a larger profit.

· Provides access to specialty markets, such as Fair Trade International, that reward shade-grown coffee with competitive premium prices.

Environmental Benefits

· Produces natural minerals that enrich soil and strengthen roots, with the long-term benefit of preventing soil erosion & degradation.

· Captures and retains rainfall which naturally lowers temperatures. Because coffee trees are heat sensitive, shade canopies replace chemicals that would otherwise be used to protect the plants from the destruction associated with extreme temperatures.

· Provides an environment that attracts species of birds, insects, and additional organisms that act as natural pesticides and essentially develop a responsible ecosystem.

· Cycles carbon from the air, helping mitigate the ongoing climate challenges we face.

· When enough shade is present, it generates critical habitats for the wildlife previously mentioned, especially migratory bird species.

Did You Know?

SHADE GROWN COFFEE is also known as BIRD FRIENDLY COFFEE!

Problems: Within the Industry

- Coffee is the second highest exported commodity.
- The amount of coffee demanded requires production methods that put quantity above quality.
- Technified coffee farming requires coffee plants to be grown in close proximity to one another and to be packed tightly. This reinforces agriculture technology that hinders conservation preservation..
- No system exists that supports the transition from technified sun-grown plantations to traditional shade-grown agroforestry. Most coffee farms are family owned & operated, meaning their livelihood depends on the quantity produced. This neglects the quality of coffee that is able to be consumed
- Monoculture farms require the use of heavy machinery that emit carbon.
- If climate change trends continue, it will be increasingly difficult to produce crops. This will drive the price of agricultural goods, such as coffee, upward.

AGROFORESTRY SYSTEMS

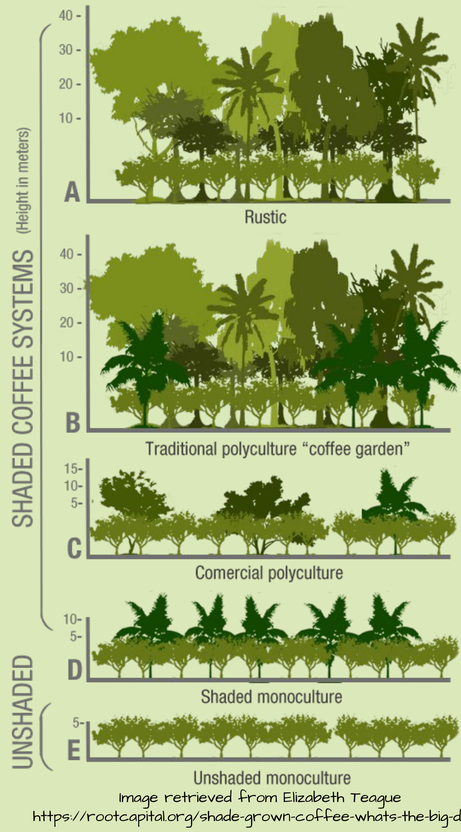

Image retrieved from Elizabeth Teague
https://rootcapital.org/shade-grown-coffee-whats-the-big-deal/

RUSTIC: THE MOST BENEFICIAL METHOD UNDER SHADE-GROWN UMBRELLA
- PROVIDES HEARTY CANOPY & DIVERSITY FOR THE ECOSYSTEM
- COFFEE PLANTS REPLACE SOME NATIVE PLANTS BUT MAJORITY OF FOREST REMAINS IN NATURAL STATE
- HEIGHT OF FOREST GROWS TO ROUGHLY 40 METERS

TRADITIONAL POLYCULTURE "COFFEE GARDEN" : WELL KNOWN IN COSTA RICA
- COFFEE IS GROWN ALONGSIDE NATIVE PLANTS
- INTERCROPPED WITH ADDITIONAL PLANTS, INCLUDING FRUITS & VEGETABLES, THAT FARMERS USE TO SUPPLEMENT THEIR INCOME
- METHOD RESEMBLES RUSTIC, WITH THE ADDITION OF NON-NATIVE PLANTS INTERCROPPED WITH THE COFFEE

COMERCIAL POLYCULTURE: SOME SHADE, SOME VARIETY
- NATIVE TREES ARE REMOVED FROM FOREST TO MAKE ROOM FOR MAXIMUM NUMBER OF COFFEE TREES
- SHADE IS PROVIDED BY PLANTED TIMBER & FRUIT TREES
- HEIGHT AND DIVERSITY ARE LIMITED

UNSHADED & SHADED MONOCULTURES: PRIMARY PLANTATION METHODS
- MONOCULTURE METHODS REQUIRE TECHNIFIED TECHNIQUES IN ORDER TO MAINTAIN CROPS
- PESTICIDES ARE NEEDED TO MAINTAIN PLANT HEALTH, INCLUDING PROTECTING COFFEE TREES FROM EXTREME TEMPERATURES
- TYPICALLY TIGHTLY PACKED ON LARGE PLOTS OF LAND

Ways YOU Can Help

Purchase Coffee From Costa Rica! This company claims to produce the best coffee & has been doing so for 25 years! Check out Cafe Milagro the next time you need beans.

1

Keep an eye out for the Fair Trade logo. Shopping Fair Trade certified helps reduce poverty, encourages sustainability, supports humane working conditions, and ultimately helps the environment!

2.

"We find that organic certification improves coffee growers' environmental performance. It significantly reduces chemical input use and increases adoption of some environmentally friendly management practices."

-Allen Blackman & Maria A. Naranjo

CERTIFIED ORGANIC

3

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Images
1. Image retrieved from Cafe Milagro
2. Image retrieved from Sanorice
3. Image retrieved from Quality Assurance International

Solutions: How to Achieve SDG 12 - Responsible Consumption

- At the local level, Costa Rica could subsidize the cost of switching to shade grown coffee. This would reduce uncertainty concerning profit margins that could be earned/lost during the transition.
  - However, if climate change hinders the regions ability to maintain natural growing conditions this becomes intangible.
- We can promote the adoption of shade-grown coffee by supporting specific premiums associated with special varieties. These should translate internationally! This will incentivize more farms to produce the "premium" organic coffee and eventually cycle out corporate managed plantations.
  - The issue here is the scale which coffee is demanded. Companies like Starbucks, who have established themselves on a global scale, profit from the fact that they can generate high yields of sun grown coffee at relatively low costs (Worland 2018). While they offer organic coffee, the majority of their product is not.
- We must describe shade-grown coffee "as touching sustainability from multiple directions" in order for more countries to transition.

Shade-grown farms in Costa Rica have proven successful in their efforts to enter the international market, and further contributed to a market driven by environmental factors rather than economic ones.. In an ideal world, a balance between economic stability and environmental consciousness would be achieved. Efforts to minimize the use of harvesting technology that runs on fossil fuels is the most important if shade grown coffee has any probability of supplying the majority of the market. The only way that will be achieved is if the incentive to switch outweighs the opportunity cost of transitioning. The proposed solutions will only work if done so simultaneously, and even then they are not guaranteed.