SOYA VS CHICKEN BURGER

PRODUCT/TECHNOLOGY OVERVIEW

SOYA BEAN BURGER:

Description : Plant-based patty made primarily from soya protein, grains, and binding agents.

Real-world : context Increasing demand due to sustainability concerns, vegan diets, and lower environmental impact.

Application : boundaries From soya cultivation to processing, packaging, and distribution.

User base: Environmentally conscious consumers, vegans, and flexitarians

PRODUCT/TECHNOLOGY OVERVIEW

CHICKEN BURGER:

Description : Traditional patty made from ground chicken meat, often mixed with f illers and seasonings.

Real-world context: Dominates fast-food markets but faces criticism for high water and carbon footprints.

Application : boundaries From poultry feed production to chicken farming, slaughtering, processing, and distribution.

User base: Mainstream consumers, fast-food industry

SWOT ANALYSIS

SOYABEAN BURGER

	STRENGTHS	WEAKNESSES
INTERNAL FACTORS	• Water Warrior: Uses a fraction of water compared to chicken • Land Saver: Requires much less agricultural space • Animal-Friendly: No ethical concerns about factory farming	• Texture Troubles: Lacks the "meaty" mouthfeel • Allergy Alert: Soya is a common allergen • Processing Puzzle: More industrial processing than whole foods
EXTERNAL FACTORS	• Fast Food Revolution: Partner with major chains • Tech Boost: Improved textures through food science • Policy Push: Government incentives for sustainable food	• Meat Lobby Pushback: Resistance from traditional agriculture • Consumer Skepticism: Fears about “Frankenfood” • - Competition: Lab-grown meat entering the market
	OPPURTUNITIES	THREATS

SWOT ANALYSIS

CHICKEN BURGER

	STRENGTHS	WEAKNESSES
INTERNAL FACTORS	• Familiar Taste: Familiar flavor loved by many • Good Protein: Complete protein with all essential amino acids • Supply Chain Strength: Well-established systems	• High Water Input: Extremely large water footprint • Disease Risk: Antibiotic resistance concerns • Ethical Issues: Factory farming controversies
EXTERNAL FACTORS	• Regenerative Farming: Adoption of better poultry practices • Feed Innovation: Use of alternative protein sources • Hybrid Products: Blend of meat with plant-based proteins	• Rising Costs: Volatile feed prices • Consumer Shift: Millennials and Gen Z moving toward flexitarian diets • Regulation: Potential restrictions on factory farming practices
	OPPURTUNITIES	THREATS

CARBON FOOTPRINT FACE-OF

CALCULATION METHOD

FORMULA:

CARBON EMISSIONS (KG CO_2EQ) = ACTIVITY LEVEL × EMISSION FACTOR

THE CARBON FOOTPRINT OF A SOYA BURGER:

-> **Farm Stage**: Soya cultivation (minimal emissions with sustainable practices)

-> **Processing**: Turning beans into protein isolate (energy-intensive)

-> **Transport:** Moving ingredients to production facilities

-> **Manufacturing**: Mixing and forming patties

-> **Distribution**: Getting to stores and restaurants

-> Per kg of soya protein: ~2kg CO_2 equivalent

-> Per average patty (100g): ~0.2kg CO_2

THE CARBON FOOTPRINT OF A SOYA BURGER:

-> **Feed Production:** Growing corn and soya for chicken feed

-> **Poultry Farming**: Chicken housing and care (methane emissions

-> **Transport**: Cold chain requirements

-> **Processing**: Slaughtering and meat preparation

-> **Waste**: Manure management emissions

-> Per kg of chicken meat: ~6kg CO_2 equivalent

-> Per average patty (100g): ~0.6kg CO_2

CARBON COMPARISON AT A GLANCE:

Metric	Soya Burger	Chicken Burger	Difference
CO2 per kg	2kg	6kg	3 times higher
CO2 per patty	0.2kg	0.6kg	3 times higher
Main Sources	Processing	Feed+Farming	-

If we take one example:

If a family of four switched from chicken to soya burgers once a week, they'd save about 83kg of CO_2 annually - equivalent to driving 200 fewer miles.

WATER FOOTPRINT: THE HIDDEN THIRST OF OUR FOOD

SOYA BURGER:

- Most soya water comes from natural rainfall (green water), making it more sustainable in water-rich regions.

-> Green Water (rainwater): 1,800 liters/kg

-> Blue Water (irrigation): 300 liters/kg

-> Grey Water (pollution dilution): 45 liters/kg

-> Total: 2,145 liters per kg of soya protein

-> Per Patty Math: 100g patty = approximately 214.5 liters of wate

WATER FOOTPRINT: THE HIDDEN THIRST OF OUR FOOD

CHICKEN BURGER:

- Chickens don't drink that much , it’s their feed that's the problem. Growing all that corn and soya for chicken feed requires enormous water inputs

-> Green Water: 3,500 liters/kg

-> Blue Water: 600 liters/kg

-> Grey Water: 225 liters/kg

-> Total: 4,325 liters per kg of chicken meat

-> Per Patty Reality: 100g patty = approximately 432.5 liters of water

WATER COMPARISON:

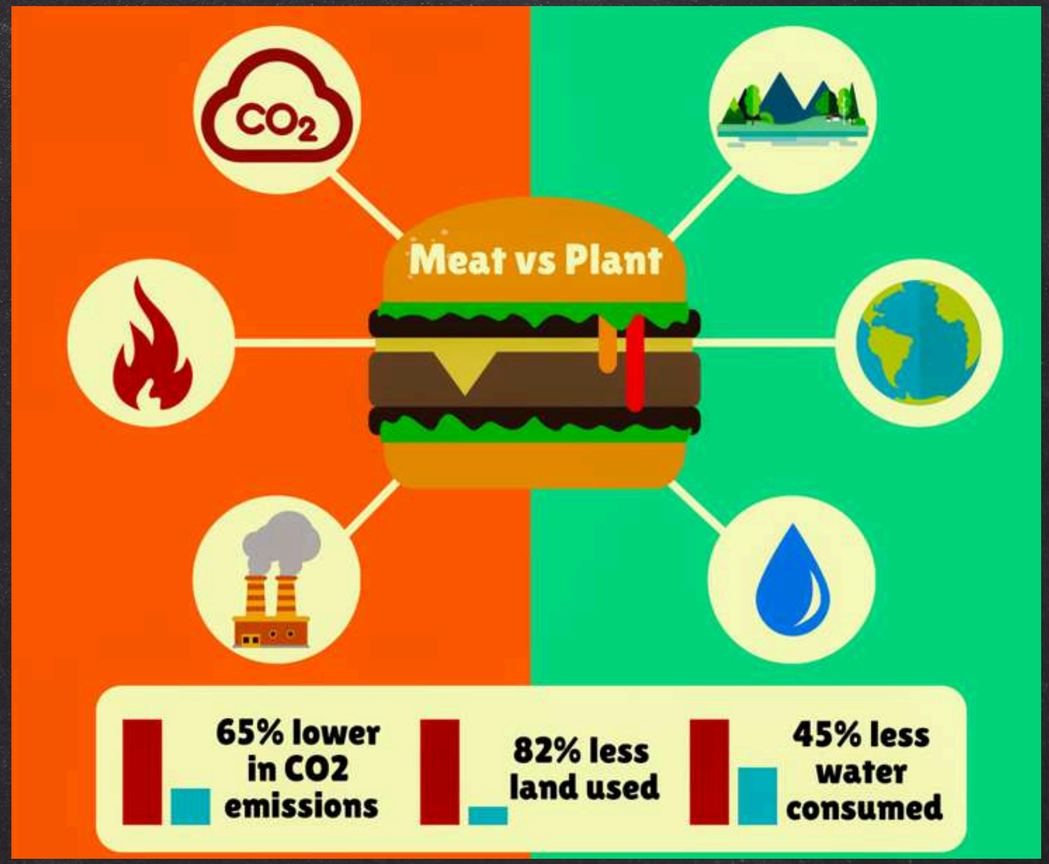
Water Type	Soya Burger	Chicken Burger	Difference
Green Water	180L	350L	2 times higher
Blue Water	30L	60L	2 times higher
Grey Water	4.5L	22.5L	5 times higher
Total	214.5L	432.5L	2 times higher

If we take one example:

If we take example, 432.5L 2 times higher If everyone in the U.S. swapped just one chicken burger for a soya burger each week, we'd save enough water to fill 1.3 million Olympic-sized swimming pools annually

COMPARATIVE NARRATIVE:

The soya bean burger presents a more sustainable alternative to the chicken burger, with significantly lower water and carbon footprints. However, its processing and taste may deter some consumers. The chicken burger, while nutritionally rich, faces criticism for its environmental impact, particularly in water usage and ethical concerns in poultry farming. Market trends favor plant-based options, but challenges remain in making them mainstream.



THANK YOU