

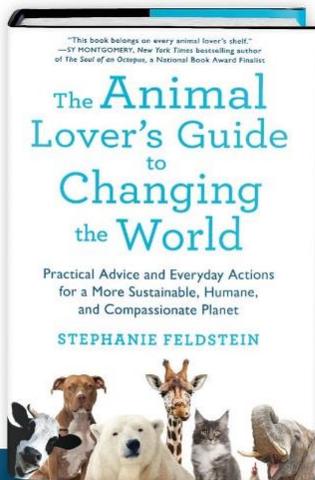


The Impact of Animal Agriculture on Biodiversity Loss

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More than 700 species protected
on the endangered species list.



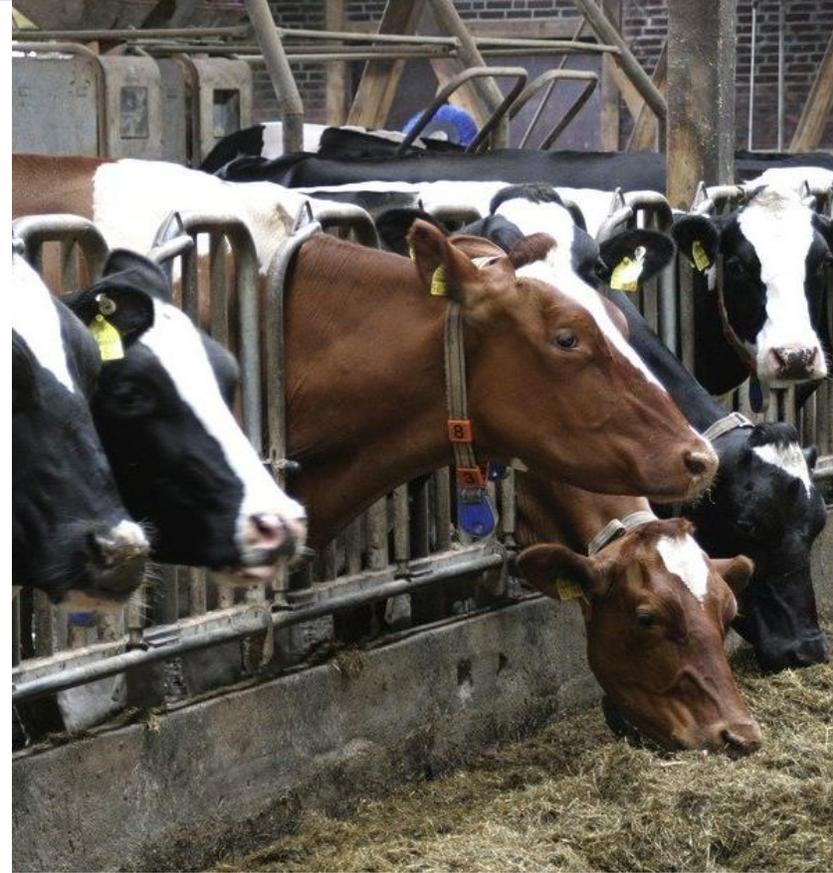
"Start changing
one meal, one day,
or one ingredient
at a time. It's not
about perfection;
**IT'S ABOUT
SAVING
ANIMALS."**

ON SALE 6/5/18



More than 500 million acres
of habitat protected.





Stages of Meat and Dairy Production



Animal Agriculture & the Extinction Crisis

- “Around 1 million species already face extinction, many within decades, unless action is taken...”
- “Land-use change has had the largest relative negative impact on nature since 1970...Agricultural expansion is the most widespread form of land-use change.”

IPBES Report, 2019

Land Use & Deforestation

- 30% of Earth's land surface
- 80% of U.S. agricultural land
- 682 million acres of land for U.S. beef production
- 80% of Amazon deforestation in Brazil
- 7.4 million acres of pinyon-juniper forests targeted for destruction in U.S.



The Cost of Habitat Loss

- Destroying irreplaceable ecosystems
 - 88% of 20,000 species analyzed will lose habitat to farmland by 2050 (Williams, 2020)
 - 1300 species will lose 25% of remaining habitat
- Displacing Indigenous peoples
- Loss of natural carbon sinks in forests and grasslands





Climate Change

- Animal agriculture is responsible for 16.5% of global greenhouse gas emissions. (FAO)
- Methane
 - Short-lived Climate Pollutant – 86x more potent than CO₂ over a 20-year period
 - 41% of meat/dairy emissions are from beef production (FAO)
 - U.S. manure-related emissions have increased 66% since 1990 (EPA)



Food Policy Is Climate Policy

- Replacing 50% of meat/dairy with plant-based foods would reduce U.S. diet-related emissions by 35% (annual emissions of 47.5 million cars).
- Replacing 90% of beef alongside that would cut dietary emissions by 51%, a cumulative reduction of 2.4 billion metric tons of GHGs by 2030.
- Not changing our diets at all, emissions associated with producing the food we eat would increase 9% by 2030.

Water Use

- Nearly 50% of the water used in the U.S. goes toward meat and dairy production
- 23% of total water consumption in the U.S. goes toward irrigating cattle-feed crops in the West (Richter, 2020)
- Leading driver of depletion in 1/3 of western watersheds
- Irrigation for pasture in California uses 2.7 trillion gallons of water per year (Pacific Institute, 2015)





Water & Air Pollution

- 40% of U.S. waterways impaired by manure (EPA)
- Meat and poultry processing facilities are a leading source of point pollution for water resources.
- In 2018, slaughterhouses released 55 million pounds of toxic substances directly into the nation's rivers and streams.
- 8,400 people die from ammonia emissions related to animal agriculture annually (Thakrar, et al, 2020)

Wildlife Conflicts

- Wildlife Services
- Competition
- Fencing
- Trampling



**THE USDA SPRAYS PESTICIDES TO SAVE GRASS FROM NATIVE
GRASSHOPPERS...**

SO CATTLE CAN EAT IT INSTEAD.



Additional Impacts

- Desertification & Poor Soil Health
- Pesticides
- Water Quality (Sedimentation & Eutrophication)
- Invasive Species
- Overfishing & Bycatch





Shifting Diets to Save Wildlife

Challenges: False Climate Solutions

- Carbon sequestration
 - Masks, seaweed, lemongrass, potty-trained cows
 - Carbon markets and offsets
 - Biogas/manure methane
-



Challenges: The Myth of Sustainable Beef

FACT CHECK:

- Regenerative grazing has no standard definition or metrics.
 - Existing pastureland could only support 27% of current beef supply in an entirely grass-fed system. (Hayek, et al, 2018)
 - Greenhouse gas emissions from managed grazing cancel the climate benefits from natural grasslands. (Change, et al., 2021)
-



Challenges: Plant-based Perceptions

- Analysis: “Vegan stigma is a barrier that inhibits dietary shifts toward a plant-based diet.” (Markowski, 2018)
- Survey: 73% of men would rather die 10 years earlier than give up meat (No Meat May, 2021)
- Survey: 81% of men say they care about the environment, but 79% would not give up meat to reduce their environmental impact (No Meat May, 2021)

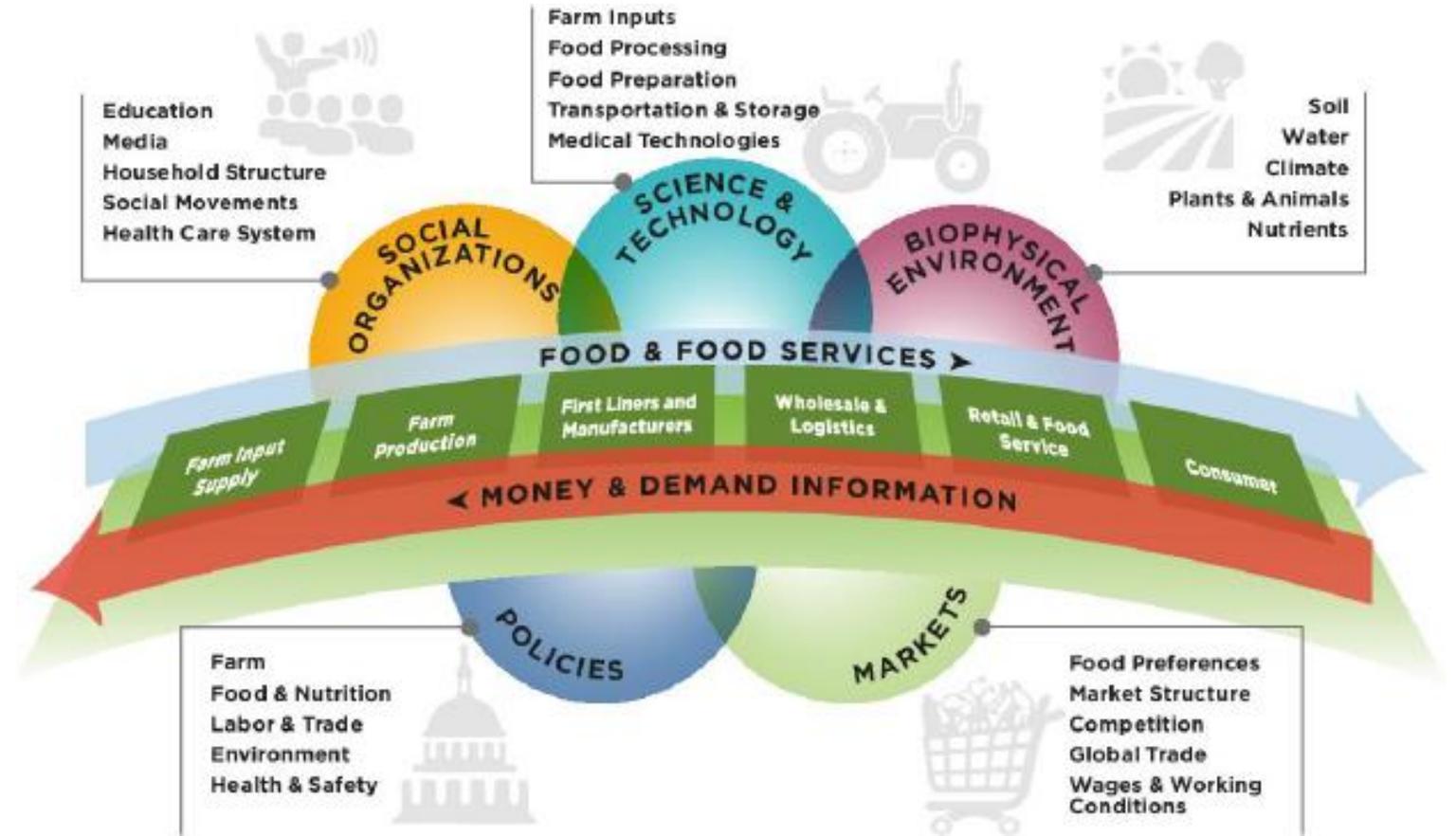


Challenges: Access to Sustainable Food

- Availability
 - Affordability
 - Familiarity
 - Knowledge, Skills, & Time
-



The Power & Limitations of Individual Choice





Strategies for Success:
Meet People
Where They Are

Transform Menus



FOODPRINT MENU

The environmental costs of popular catering items

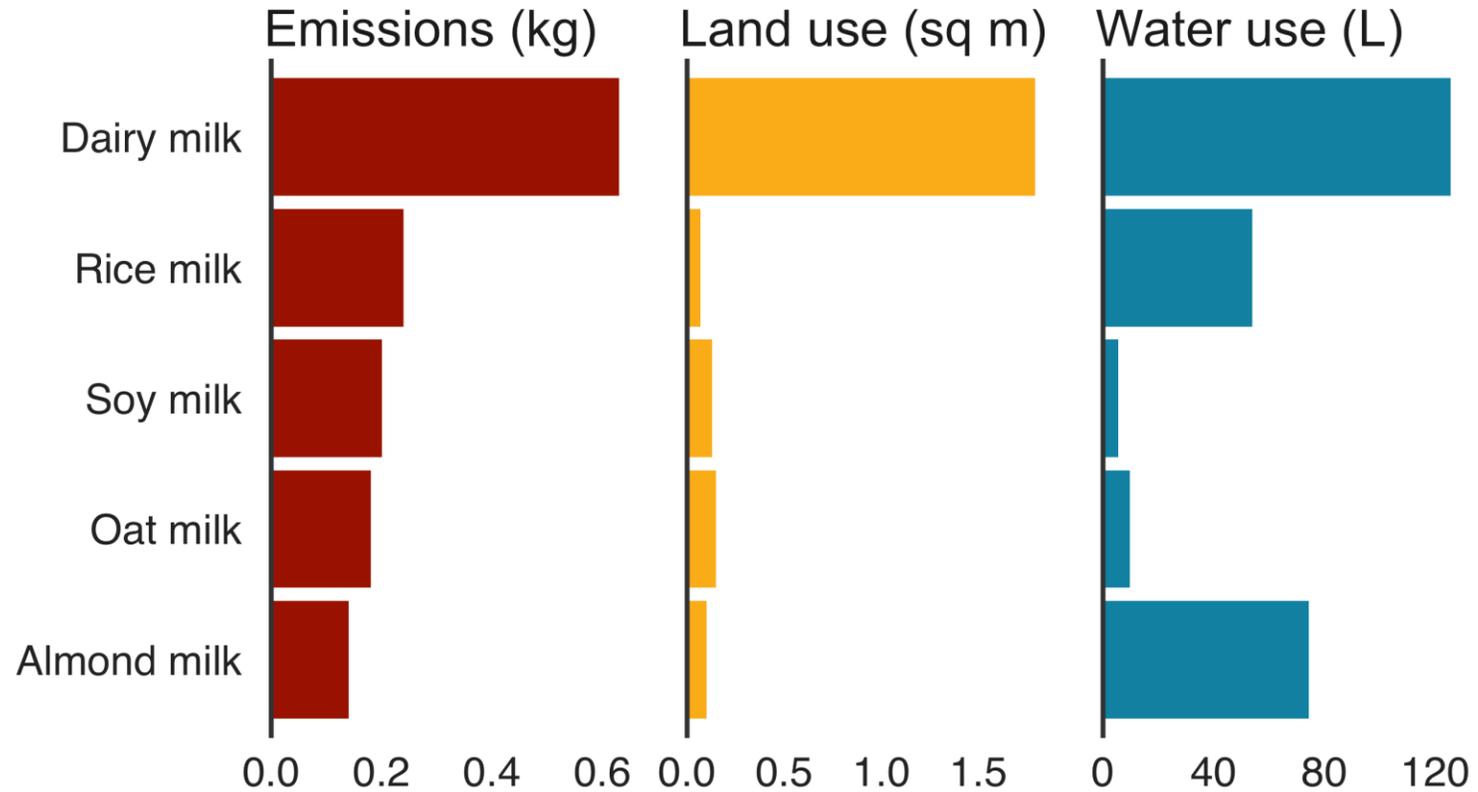
| | GHG (lb CO2e) | LAND USE (ft2) | WATER (gal) |
|---------------------------------------------------------------------------------------------------------------------------------|------------------|-------------------|----------------|
| -BREAKFAST- | | | |
|  Bagel with vegan cream cheese | 0.8 | 14 | 14 |
| Bagel with cream cheese | 1.5 | 14 | 24 |
|  Soy milk | 0.4 | 2 | 4 |
| Milk | 1.4 | 6 | 9 |
| -LUNCH- | | | |
|  Black bean burrito | 1.2 | 11 | 36 |
| Beef burrito | 15 | 200 | 120 |
| Pork Burrito | 9 | 92 | 110 |
|  Portobello mushroom and pepper fajitas | 1.4 | 11 | 30 |
| Beef fajitas | 8.8 | 140 | 41 |
| Chicken fajitas | 1.6 | 17 | 20 |
|  Roasted veggie sandwich | 1 | 13 | 23 |
| Ham and cheese sandwich | 5.5 | 41 | 53 |
| -DINNER- | | | |
|  Black bean and sweet potato power bowl | 0.6 | 5 | 7 |
|  Black bean tacos | 1.7 | 14 | 39 |
| NY strip steak with mashed potatoes and veggies | 37 | 590 | 270 |
|  Creamy garlic pasta with roasted tomatoes | 0.6 | 4 | 17 |
| Chicken alfredo | 6.1 | 45 | 53 |
|  Veggie lasagna | 11 | 73 | 130 |
| Beef lasagna | 28 | 340 | 180 |

 Plant-based meals offer delicious options that are better for climate, land, water and wildlife.



Which milk should I choose?

Environmental impact of one glass (200ml) of different milks



Source: Poore & Nemecek (2018), Science. Additional calculations, J. Poore



Appeal to Taste

OPRAH WINFREY'S
DAY 1: ROASTED PUMPKIN &
MUSHROOM RISOTTO
OMD FOR THE PLANET 30 DAY CHALLENGE



389 g CO₂eq

VERSUS

817 g CO₂eq

with whole milk, butter,
and added cheese



Health & Nutrition Education



Support Food Sovereignty



Strategies for Success: Policy Support for Plant-based Diets

Extinction Facts

Serving Size 8 fl. oz. 2% Milk

| | |
|------------------|-----------|
| Greenhouse Gases | 1.0 |
| Habitat Loss | 12% |
| Water Use | 20.9 gal. |
| Manure | 0 |

WARNING: Wildlife harmed by milk production include San Joaquin kit fox, pearly mussel, southwestern willow flycatcher & western water snake & black-footed ferret.

CONTAINS CLIMATE CHANGE, DEFORESTATION, POLLUTION, WILDLIFE EXTINCTION.

* Animal agriculture causes more environmental harm than any other single industry, endangering wildlife, contributing at least 14.5% of global greenhouse gas emissions and accounting for 80% of antibiotic use, 37% of pesticide use and nearly 50% of water use in the United States.

Learn more at ExtinctionFacts.org

Extinction Facts

Serving Size 4 slices (4 oz.) Bacon

| | |
|------------------|-------------------------|
| Greenhouse Gases | 3.0 |
| Habitat Loss | 2.0 |
| Water Use | 20.2 gal. |
| Manure | 165.0 gal. 20.2 lbs. |

WARNING: Wildlife harmed by pork production include Indiana bat, whooping crane, copperbelly water snake & black-footed ferret.

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Extinction Facts

Serving Size 1/4 lb. Ground Beef

| | |
|------------------|-----------|
| Greenhouse Gases | 1.0 |
| Habitat Loss | 12% |
| Water Use | 20.9 gal. |
| Manure | 0 |

WARNING: Wildlife harmed by chicken production include San Joaquin kit fox, pearly mussel, southwestern willow flycatcher & western water snake & black-footed ferret.

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Extinction Facts

Serving Size 2 Chicken Breast

| | |
|------------------|-----------|
| Greenhouse Gases | 1.0 |
| Habitat Loss | 12% |
| Water Use | 20.9 gal. |
| Manure | 0 |

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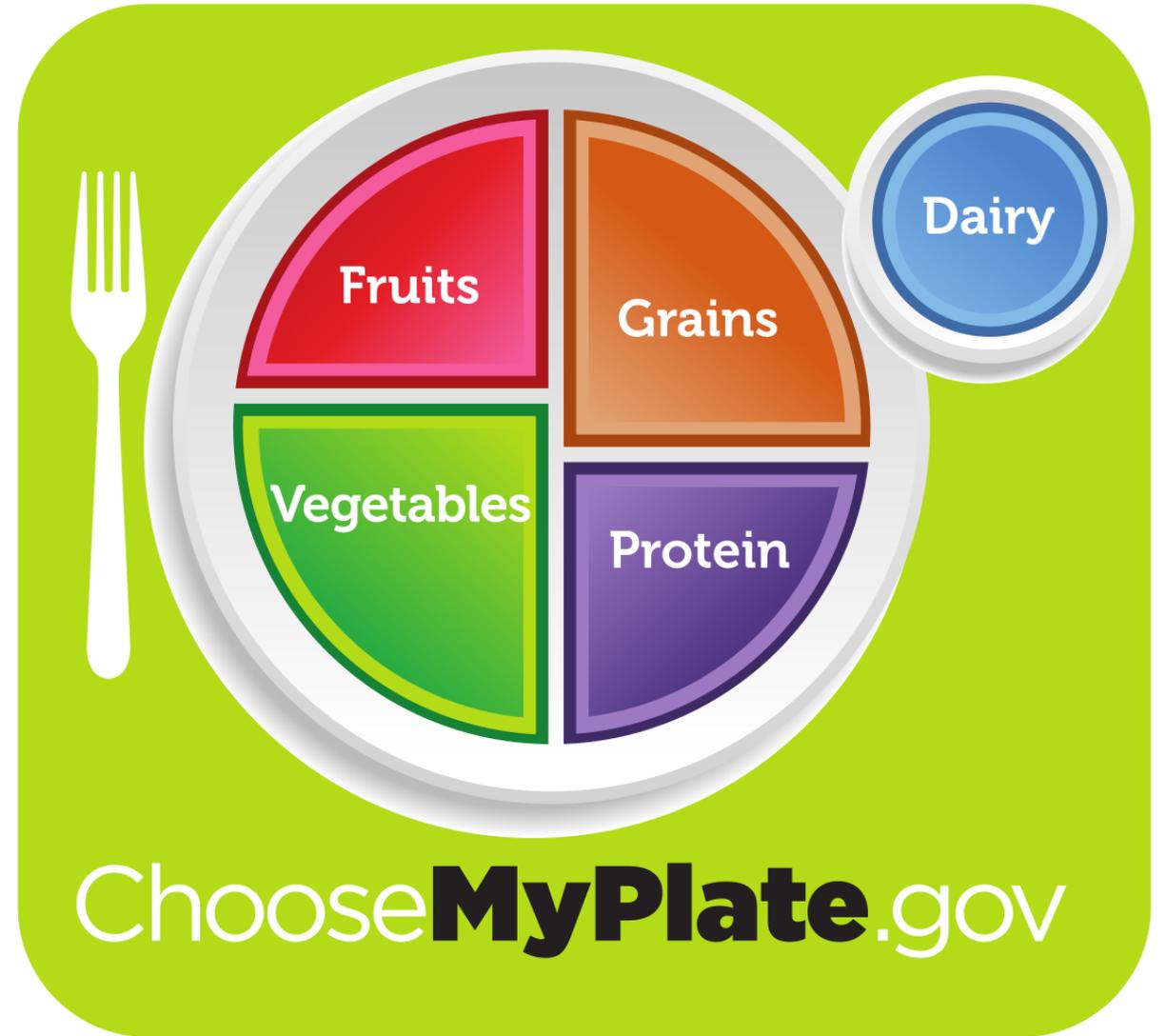
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Dietary Guidelines & Procurement



Climate Action Plans



**Eating less beef isn't a threat
to the American way of life.
But the climate crisis is.**

Municipal Policies



Strategies



for Change

Individual

- Education
- Behavior Change
- Increase Demand
- Collective Action

Market

- Increase options everywhere
- Commitments to reduce animal products
- Regional food hubs

Policy

- Procurement
- Nutrition guidelines
- Climate plans
- Subsidies (direct and indirect)
- Accountability

Thank You

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