Food for Thought

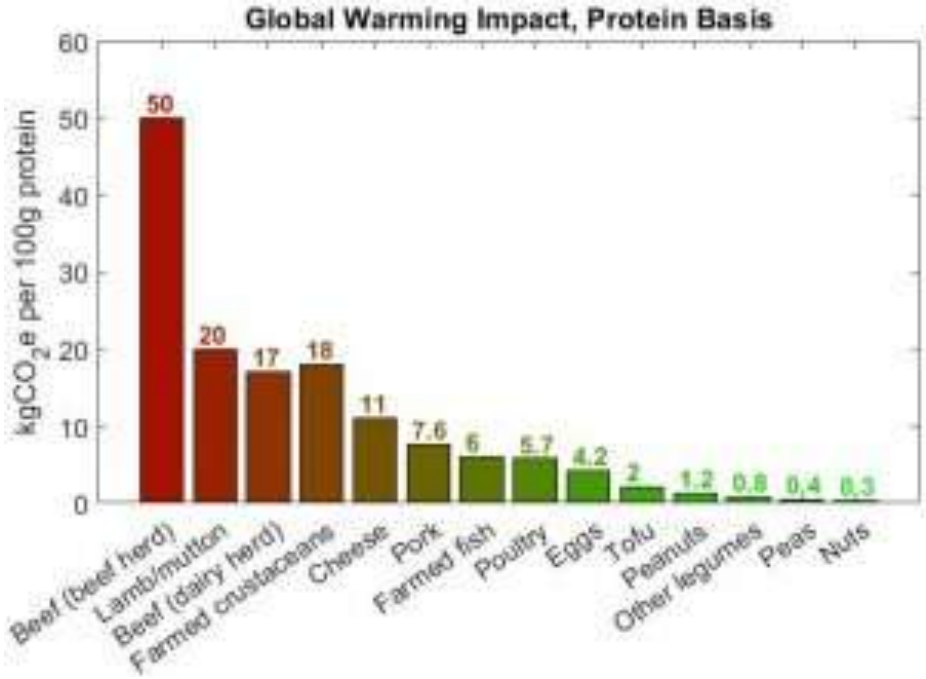
Meat Production and Environmental Heath

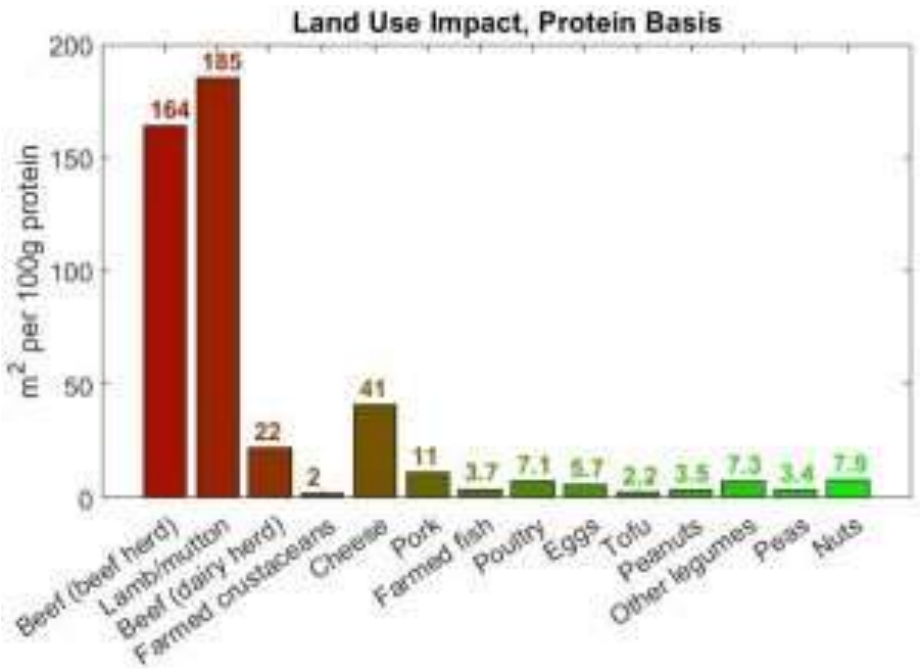
Poore, J. and T. Nemecek 2018. Reducing food's environmental impacts through producers and consumers. Science Vol. 360 (6392): 987-992.

https://science.sciencemag.org/content/360/6392/987

Abstract

Food's environmental impacts are created by millions of diverse producers. To identify solutions that are effective under this heterogeneity, we consolidated data covering five environmental indicators; 38,700 farms; and 1600 processors, packaging types, and retailers. Impact can vary 50-fold among producers of the same product, creating substantial mitigation opportunities. However, mitigation is complicated by trade-offs, multiple ways for producers to achieve low impacts, and interactions throughout the supply chain. Producers have limits on how far they can reduce impacts. Most strikingly, impacts of the lowest-impact animal products typically exceed those of vegetable substitutes, providing new evidence for the importance of dietary change. Cumulatively, our findings support an approach where producers monitor their own impacts, flexibly meet environmental targets by choosing from multiple practices, and communicate their impacts to consumers.





Springmann et al. 2018, Nature vol. 562: 519-525.
https://www.nature.com/articles/s41586-018-0594-0#Tab5

Abstract

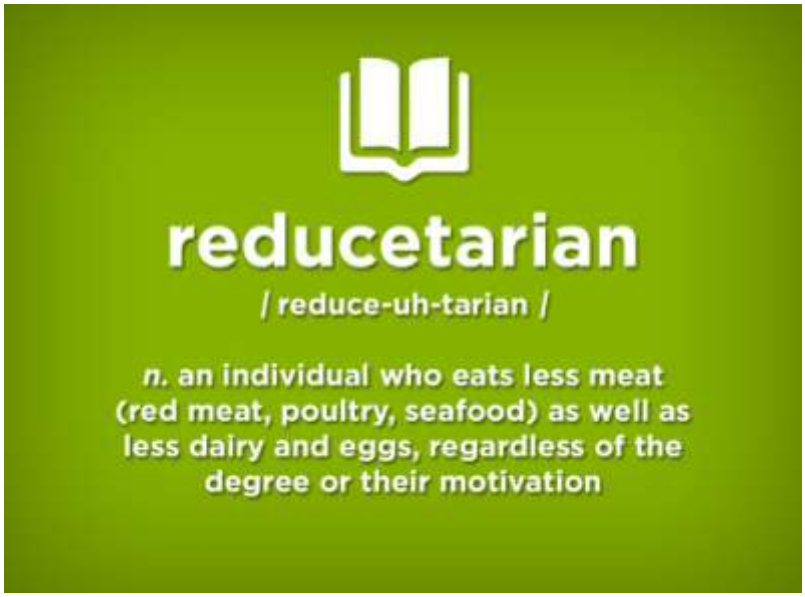
The food system is a major driver of climate change, changes in land use, depletion of freshwater resources, and pollution of aquatic and terrestrial ecosystems through excessive nitrogen and phosphorus inputs. Here we show that between 2010 and 2050, as a result of expected changes in population and income levels, the environmental effects of the food system could increase by 50–90% in the absence of technological changes and dedicated mitigation measures, reaching levels that are beyond the planetary boundaries that define a safe operating space for humanity. We analyse several options for reducing the environmental effects of the food system, including dietary changes towards healthier, more plant-based diets, improvements in technologies and management, and reductions in food loss and waste. We find that no single measure is enough to keep these effects within all planetary boundaries simultaneously, and that a

synergistic combination of measures will be needed to sufficiently mitigate the projected increase in environmental pressures.

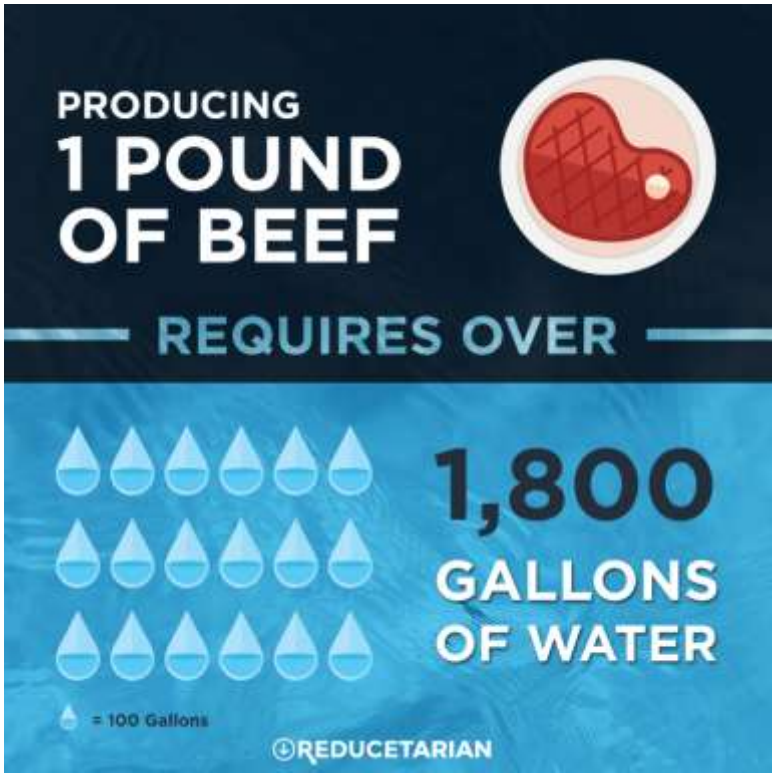
Flexitarian is used to describe a diet or a person who eats a mostly vegetarian diet,that occasionally includes meat.

The researchers found a global shift to a "flexitarian" diet was needed to keep climate change even under 2C, let alone 1.5C. This flexitarian diet means the average world citizen needs to eat 75% less beef, 90% less pork and half the number of eggs, while tripling consumption of beans and pulses and quadrupling nuts and seeds. This would halve emissions from livestock and better management of manure would enable further cuts.

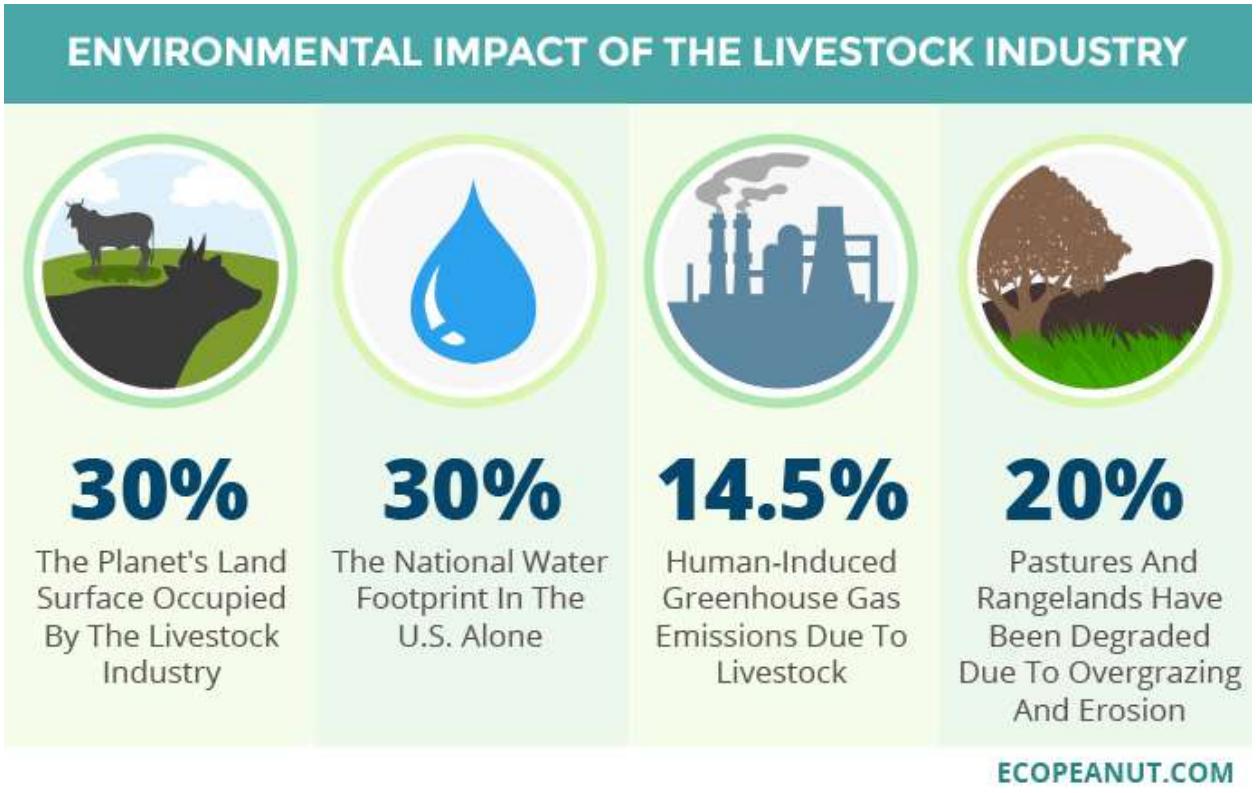
https://reducetarian.org/




EVERY MINUTE
THE LAND EQUIVALENT OF 7 FOOTBALL FIELDS IS CLEARED
TO MAKE ROOM FOR ANIMAL AGRICULTURE
REDUCETARIAN


PRODUCING
1 POUND OF BEEF
REQUIRES OVER
1,800 GALLONS OF WATER
= 100 Gallons
REDUCETARIAN

https://www.ecopeanut.com/

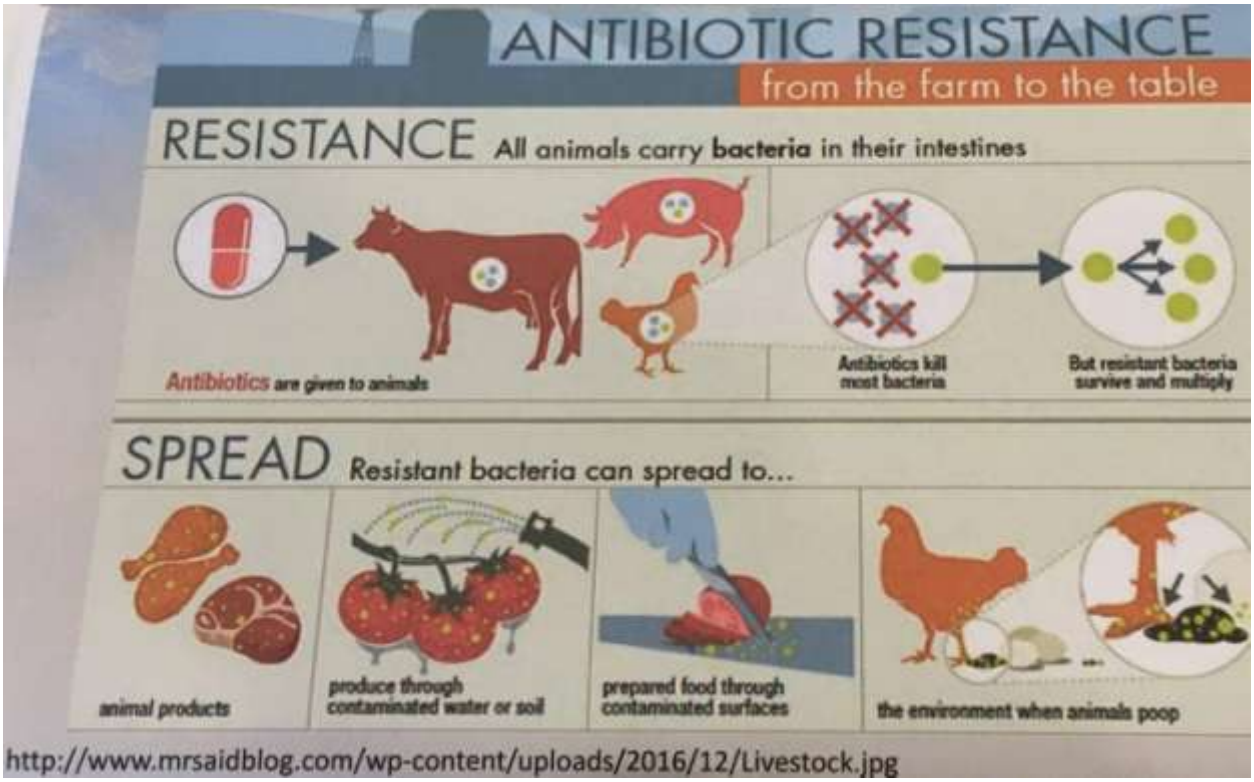


TOP 20 COUNTRIES THAT EAT THE MOST MEAT

MEAT CONSUMPTION (IN KILOGRAMS) PER PERSON EVERY YEAR OF THE TOP 20 COUNTRIES

United States	120 kg
Kuwait	119.2 kg
Australia	111.5 kg
The Bahamas	109.5 kg
Luxemburg	107.9 kg
New Zealand	106.4 kg
Austria	102 kg
French Polynesia	101.9 kg
Bermuda	101.7 kg
Argentina	98.3 kg
Spain	97 kg
Israel	96 kg
Denmark	95.2 kg
Canada	94.3 kg
St Lucia	93.6 kg
Portugal	93.4 kg
Saint Vincent and the Grenadines	91.4 kg
Netherlands Antilles	91 kg
Italy	90.7 kg
Slovenia	88.3 kg

ECOPEANUT.COM



http://www.mrsaidblog.com/wp-content/uploads/2016/12/Livestock.jpg

IFAP impacts to public health

Antibiotic use in the U.S.

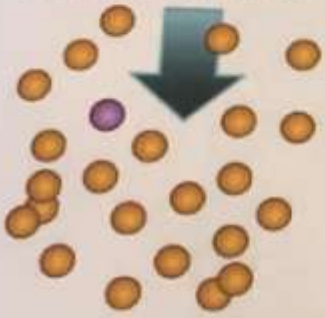
	Human use	Animal use
Annual distribution:	3.3 million kg	13 million kg
Primary use:	Treat disease	Promote growth

Kim B. Johns Hopkins Center for a Livable Future; 2011.

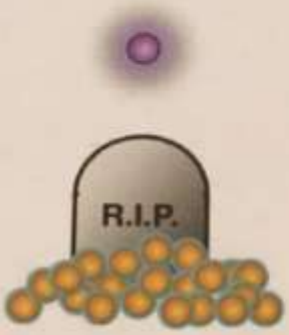
IFAP impacts to public health

Antibiotic resistance

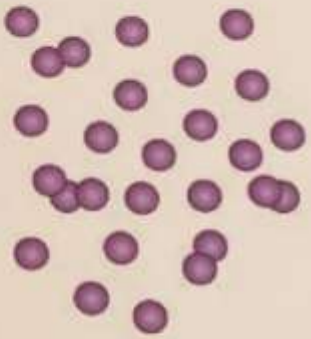
Antibiotics



1. *Pathogens are routinely exposed to antibiotics*



2. **Susceptible** pathogens die, **resistant** pathogens survive



3. **Resistant** pathogens multiply