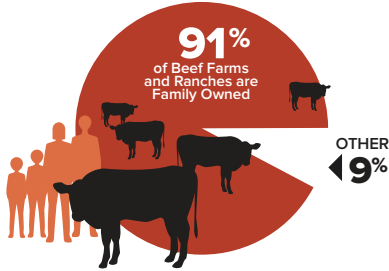


## WHAT'S SUSTAINABILITY?

Producing safe, nutritious beef while balancing environmental stewardship, social responsibility and economic viability.



## Typical U.S. Cattle Lifecycle

### Cow-calf

**DIET** } Grass  
Other Human-inedible Plants



**DURATION** | 6 - 10 Months

### Stocker/backgrounder

**DIET** } Mostly Grass  
Other Human-inedible Plants



**DURATION** | 2 - 6 Months

### Finishing

**DIET** } Grain  
Other Human-inedible Plants



**DURATION** | 4 - 6 Mos. Grain  
- Or -  
6 - 10 Mos. Grass

## Same Beef, Fewer Cattle

Compared to 1977, today's beef farmers and ranchers produce the same amount of beef with 33% fewer cattle.



### How'd they do it?

- Better Animal Health & Welfare
- Better Animal Nutrition
- Better Animal Genetics

Improved efficiency and animal well-being mean a 16% lower carbon footprint and fewer natural resources used for every pound of beef produced.

**18%**



## More with Less

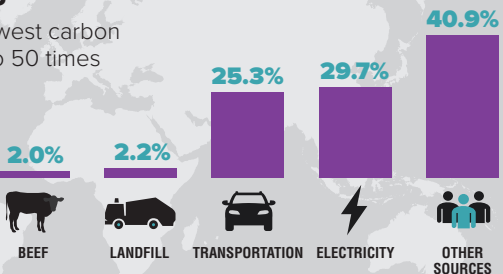
U.S. farmers and ranchers produce **18%** of the world's beef with only **8%** of the world's cattle.

**8%**



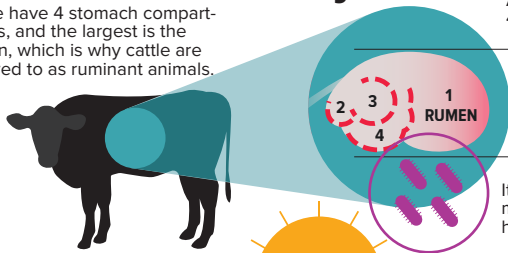
## Fewer Cattle, Less Emissions

U.S. beef has one of the lowest carbon footprints in the world, 10 to 50 times lower than some nations. Greenhouse gas (GHG) emissions from cattle only account for 2% of U.S. GHG emissions.



## The Stomach for the Job

Cattle have 4 stomach compartments, and the largest is the rumen, which is why cattle are referred to as ruminant animals.



A cow's stomach can be 40 to 50 gallons in volume



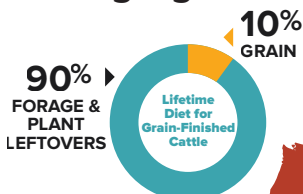
It is naturally filled with trillions of microbes that can break down human-inedible plants.

## Cattle Upcycling Super-power

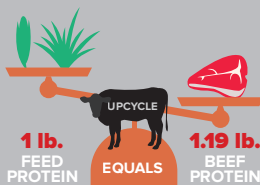
The rumen microbes give cattle their upcycling super-power – cattle upgrade plants of little to no nutritional value to people to high-quality protein, micronutrients, and other important products.



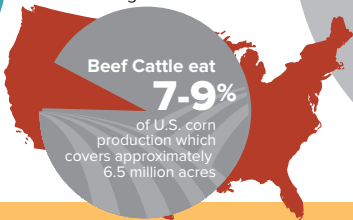
## Going Against the Grain



Whether grass- or grain-finished, most of what cattle eat in their life is grass, and less than 10% of the lifetime feed of grain-finished cattle is grain.



**Corn Fed to Cattle =**  
2% of U.S. cropland acres  
0.3% of total U.S. land area



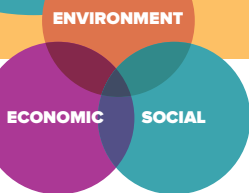
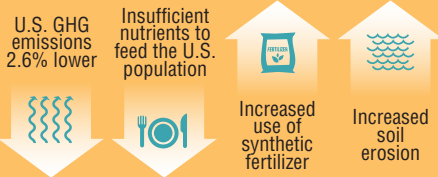
Grain-finished beef cattle provide 19% more human-edible protein than they consume.

Sustainability is about balancing multiple economic, social, and environmental issues at once, while recognizing tradeoffs.

## Sustainability is Bigger Than Carbon Footprints

Relative differences in carbon footprints between animal vs. plant foods don't add up to significant GHG-emissions differences at the national level.

**For example, what would be the consequences if every American went vegan?**



## Beef is a Nutrient-rich Food



One 3-ounce cooked serving of a composite, trimmed, retail beef cut contributes less than 10% of calories to a 2000-calorie diet, yet it supplies more than 10% of the Daily Value for 10 essential nutrients including protein, iron, zinc and many B vitamins.

### Reference list for Quick Facts on Beef Sustainability:

Brooks, A. et al.; Does grass-finished beef leave a lower carbon footprint than grain-finished beef? Available at: [beefresearch.org/beefsustainability.aspx](http://beefresearch.org/beefsustainability.aspx) (Tough Question #6)

Capper, 2011. J. Animal Sci. 89:4249-4261.

CAST, 1999. Animal agriculture and global food supply. Task force report No. 135 July 1999.

Herrero et al., 2013. Proc. Natl. Acad. Sci. 110:20888-20893.

NASEM, 2016. Nutrient Requ. of Beef Cattle. 8th revised ed. DOI: <https://doi.org/10.17226/19014>

USDA 2012 Ag Census. Available at: [https://www.agcensus.usda.gov/Publications/2012/#full\\_report](https://www.agcensus.usda.gov/Publications/2012/#full_report)

USDA-ARS Nutrient Database, SR28, NDB#13364, available at: <https://www.ars.usda.gov/hea/bhnrc/ndl>

USDA-ERS, 2018. Major Land Uses. Available at: <https://www.ers.usda.gov/data-products/major-land-uses.aspx>

USDA-NASS Quick Stats Tools. Available at: [https://www.nass.usda.gov/Quick\\_Stats/](https://www.nass.usda.gov/Quick_Stats/)

US EPA Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2014. Available at: <https://www.epa.gov/sites/production/files/2016-04/documents/us-ghg-inventory-2016-main-text.pdf>

UN FAOSTAT database. Available at: <http://www.fao.org/faostat/en/#home>

White and Hall, 2017. Proc. Natl. Acad. Sci. 114:E10301-E10308.



Funded by Beef Farmers and Ranchers