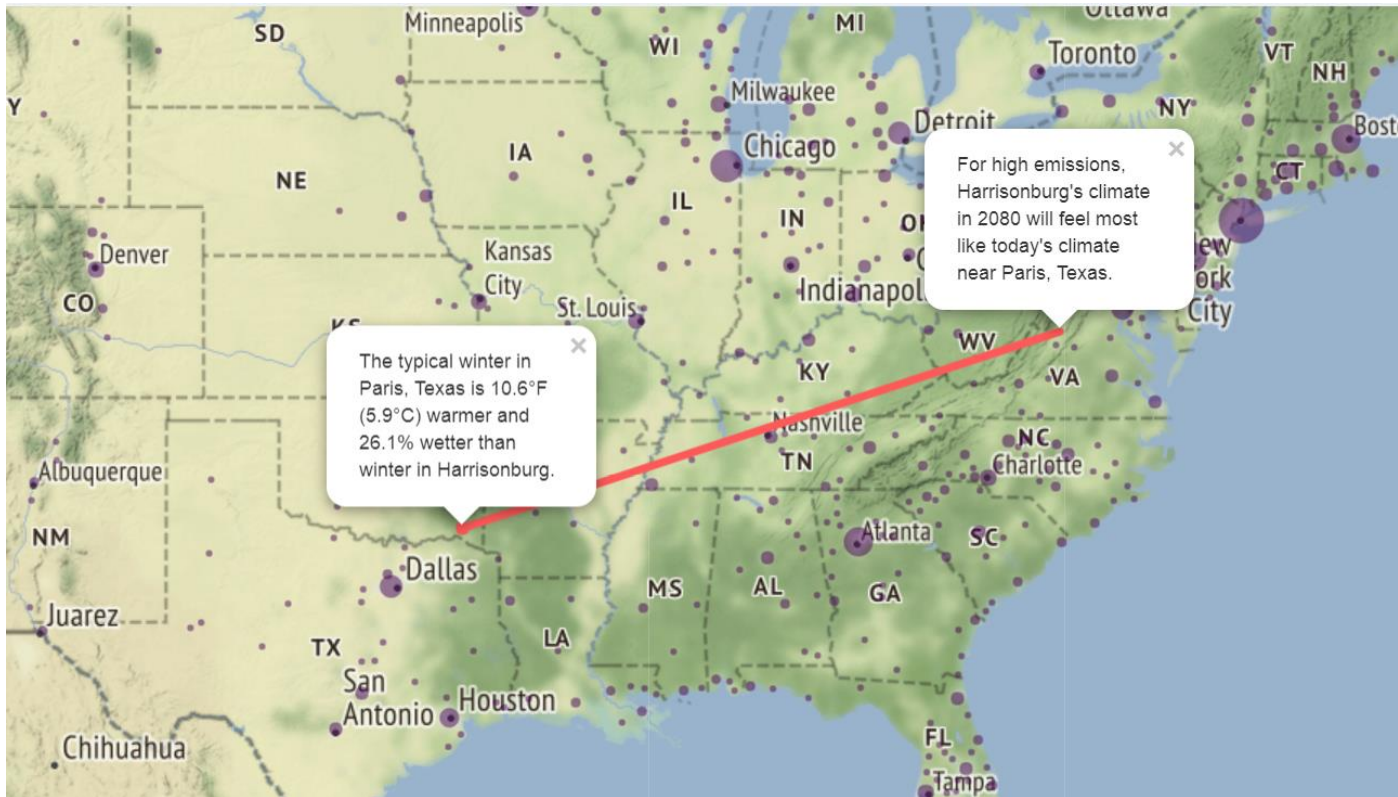


# What is in store of the climate of Harrisonburg?



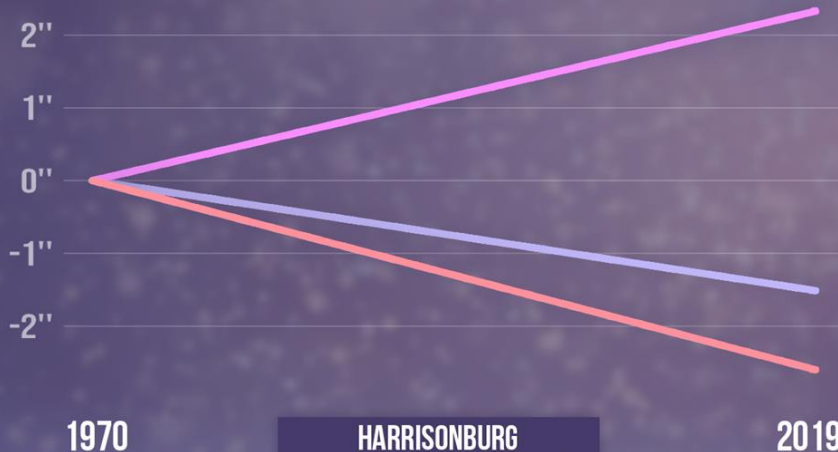
<https://fitzlab.shinyapps.io/cityapp/>

How unusual is this spring?

<https://www.washingtonpost.com/weather/2020/02/13/spring-has-arrived-weeks-early-south-flowers-are-blooming-that-could-be-problem/>

# SEASONAL SNOW TRENDS

FALL WINTER SPRING



Change in total seasonal (fall, winter, spring) snowfall from Dec 1969 to Nov 2019.  
Source: RCC-ACIS.org. Produced 2/3/2020

CLIMATE  CENTRAL

# We should be talking about adaptation and resilience also

*Mywa Mole, Kanina Moira*



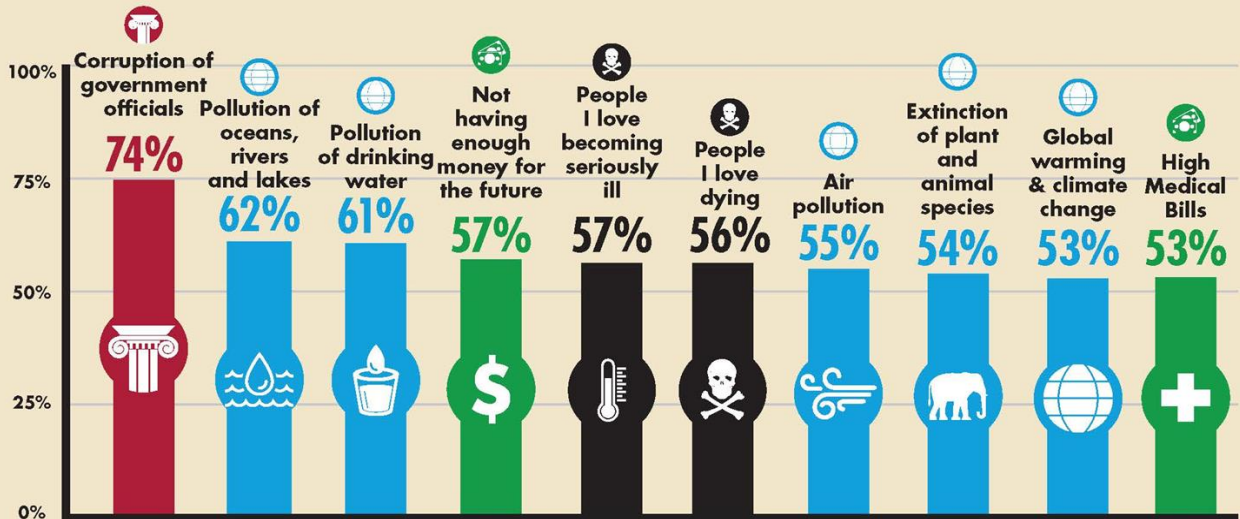
<ul style="list-style-type: none"> <li>▪ Short rains harvests</li> <li>▪ Short dry spell</li> <li>▪ Reduced milk yields</li> <li>▪ Increased HH Food Stocks</li> <li>▪ Land preparation</li> </ul>			<ul style="list-style-type: none"> <li>▪ Planting/Weeding</li> <li>▪ Long rains</li> <li>▪ High Calving Rate</li> <li>▪ Milk Yields Increase</li> </ul>			<ul style="list-style-type: none"> <li>▪ Long rains harvests</li> <li>▪ A long dry spell</li> <li>▪ Land preparation</li> <li>▪ Increased HH Food Stocks</li> <li>▪ Kidding (Sept)</li> </ul>			<ul style="list-style-type: none"> <li>▪ Short rains</li> <li>▪ Planting/weeding</li> </ul>		
Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec

Seasonal Calendar



Coverage and concern are increasing

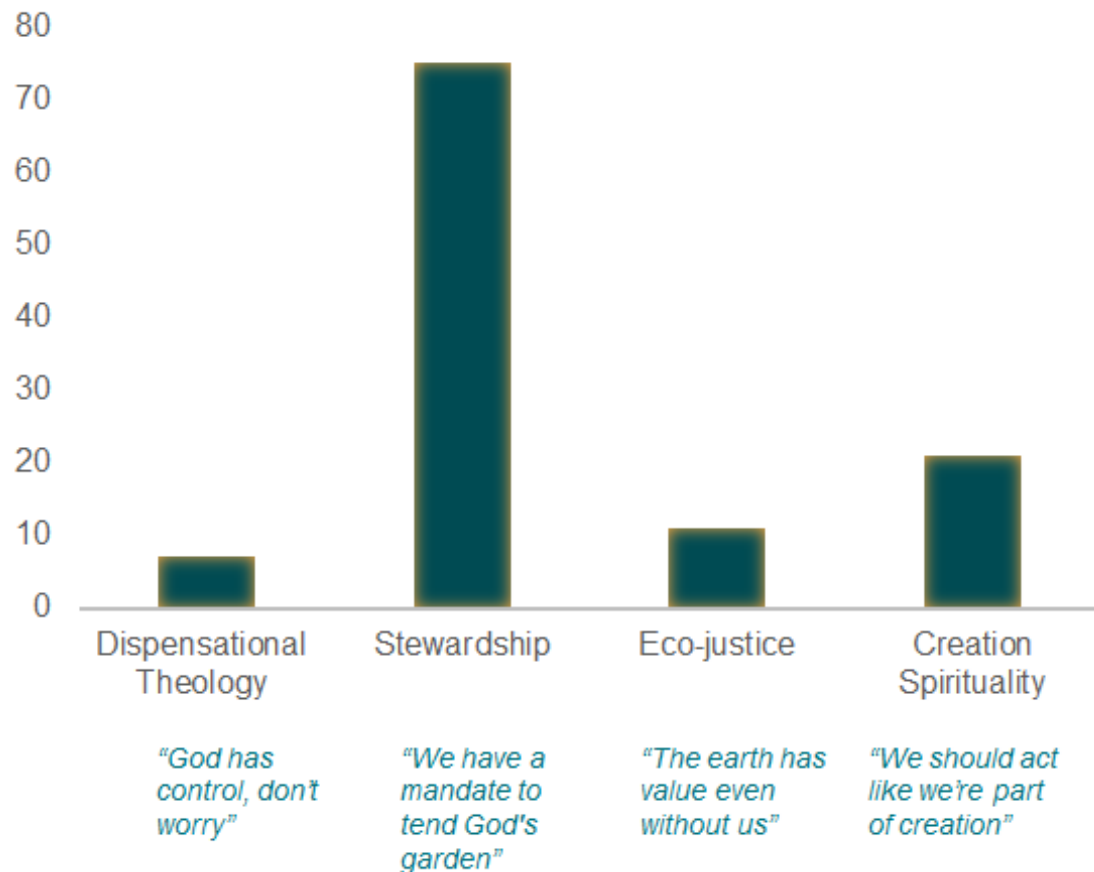
## Top 10 Fears of 2018



Above are the 10 fears for which the highest percentage of Americans reported being *afraid* or *very afraid*.

 Government  Environment  Economic  Illness and Death

## Percent of Mennonites across Four Christian Environmental Views (n=7294)



## Community Mennonite Church, Harrisonburg, VA

**Creation is our neighbor. Contemplate that statement for a moment. How do we treat our neighbor?** There are too many pollutants in our water. There is too much plastic in our oceans. There is too much carbon in our air. Creation is hurting, just as its human community hurts. The time has come for us to respond. Yet we will not struggle to save what we do not love. We cannot love what we do not know. We cannot know what we do not see or hear or touch. **We have separated ourselves from our creation neighbors.** This cannot last.



## Article 21. Christian Stewardship

We believe that everything belongs to God, who calls us as the church to live as faithful stewards of all that God has entrusted to us.

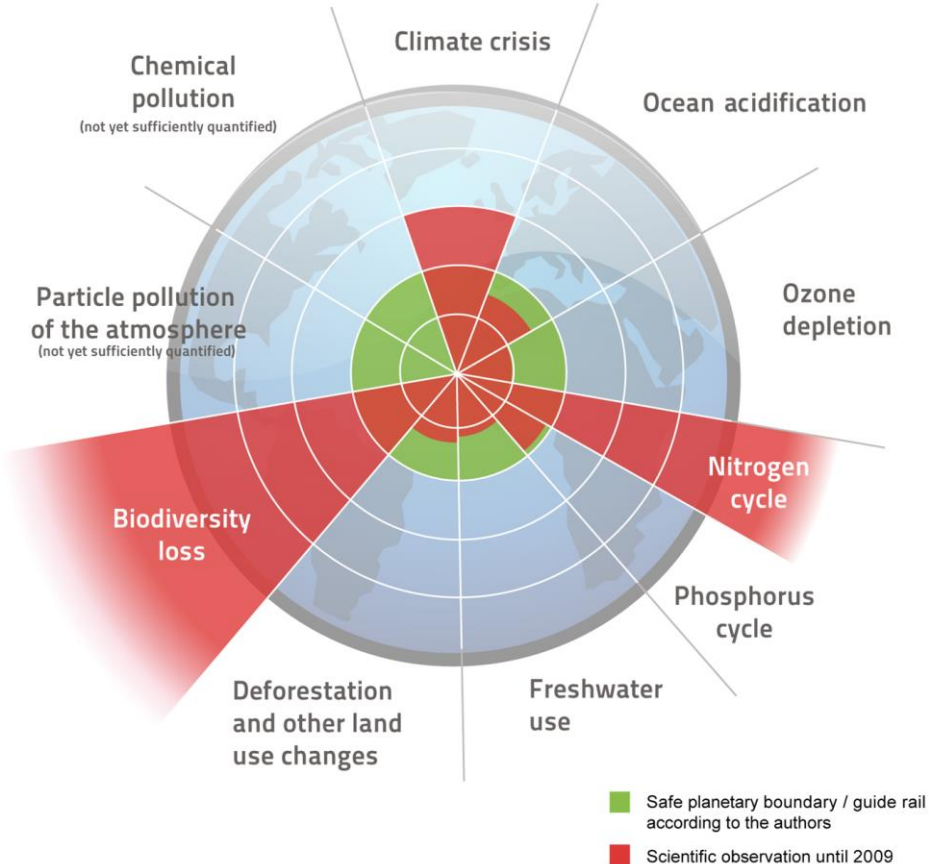
As stewards of God's earth, we are called to care for the earth and to bring rest and renewal to the land and everything that lives on it. 11 As stewards of money and possessions, we are to live simply, practice mutual aid within the church, uphold economic justice, and give generously and cheerfully. 12 As persons dependent on God's providence, we are not to be anxious about the necessities of life, but to seek first the kingdom of God. 13 We cannot be true servants of God and let our lives be ruled by desire for wealth.



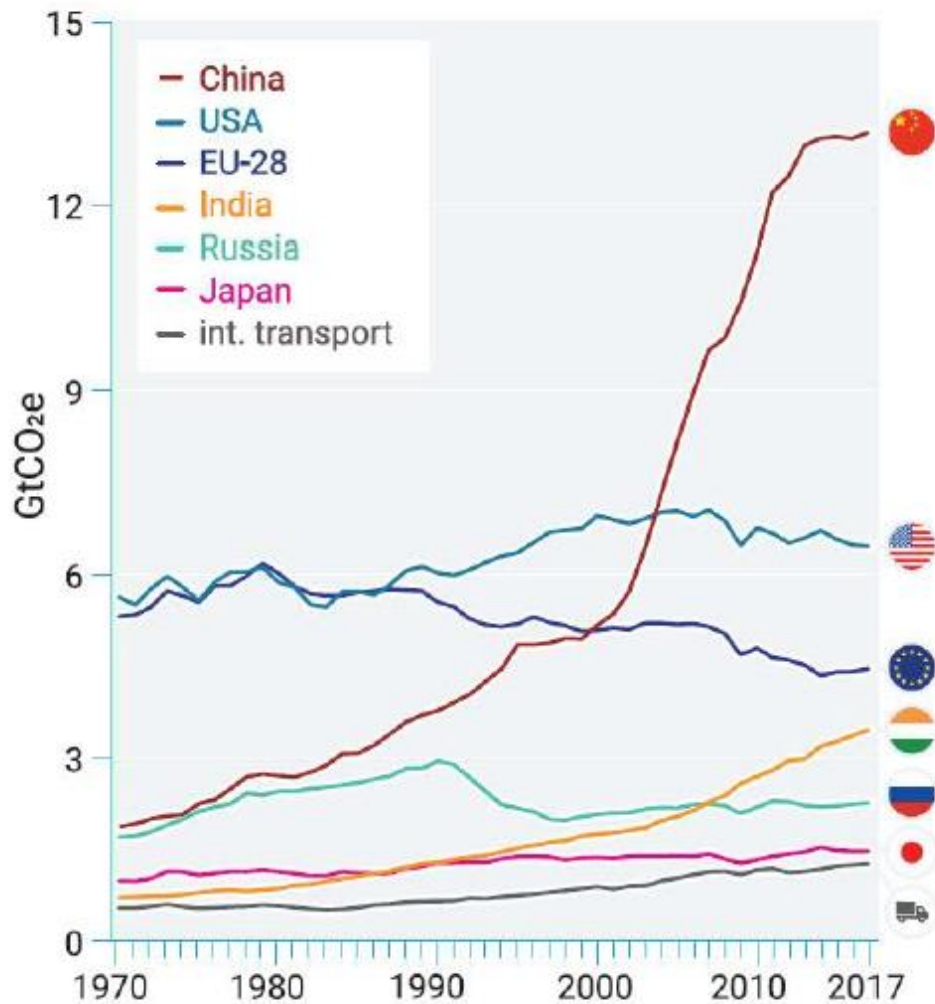
What are the other largest environmental problems?

# Planetary Boundaries

after Johan Rockström, Stockholm Resilience Centre et al. 2009

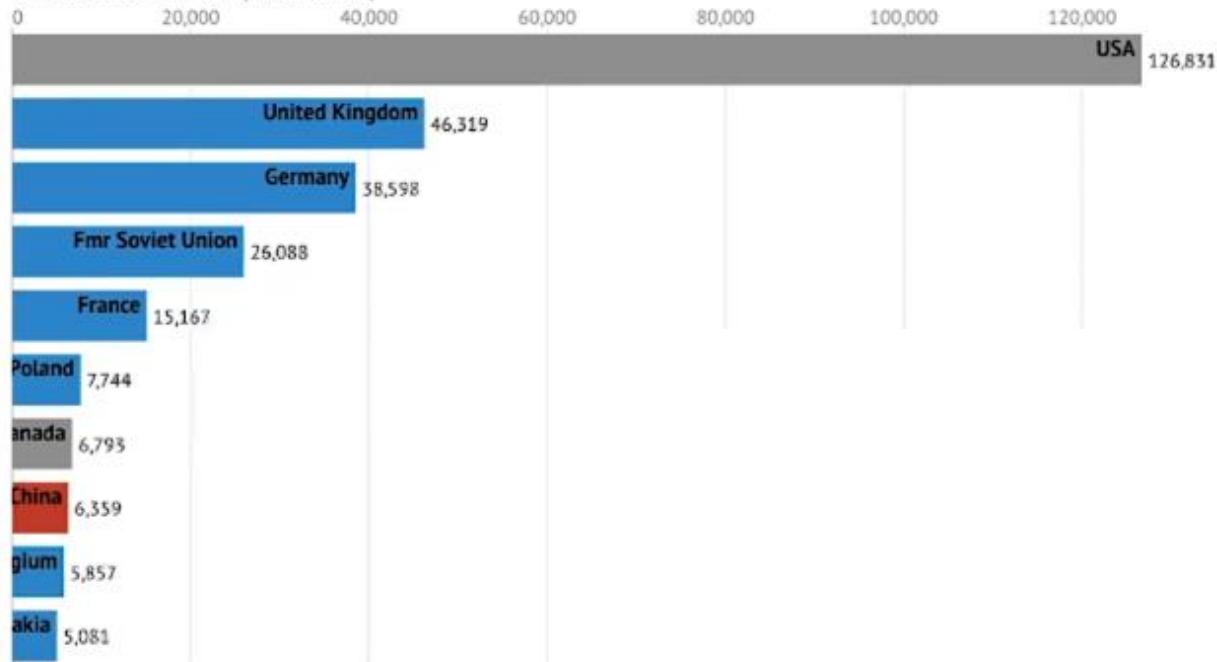


Who is the biggest carbon emitter?



## The countries with the largest cumulative CO2 emissions since 1750

Cumulative CO2 emissions (million tonnes)

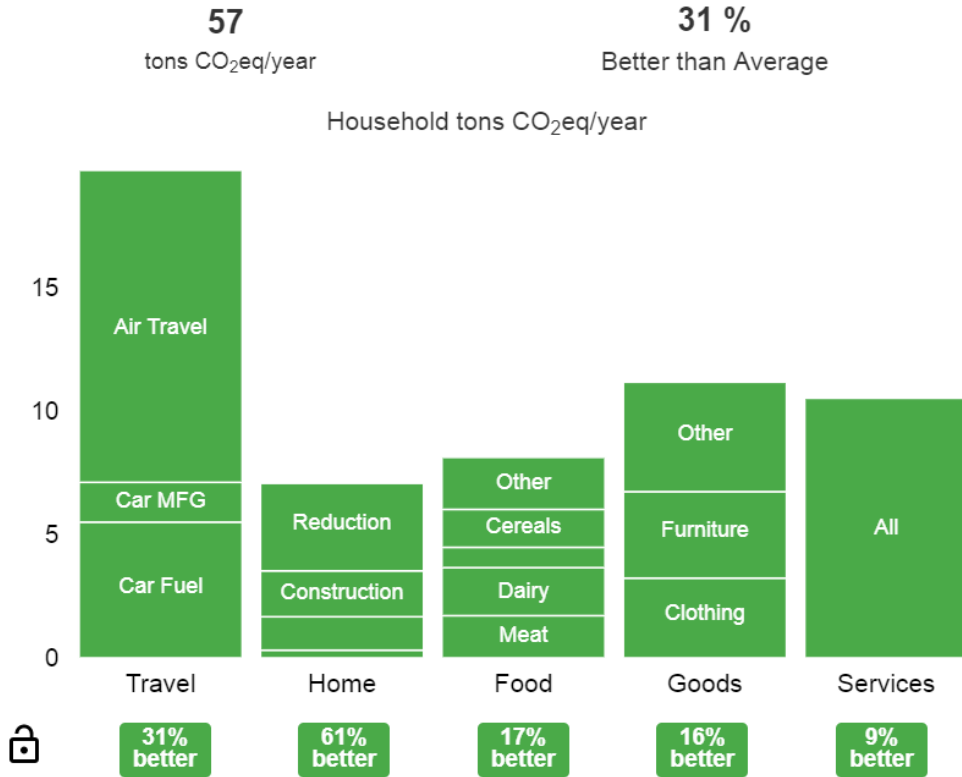


What do we do? What should we do?

*What makes a difference?*



# Where is your carbon footprint?



[Drawdown](#)  
[Next](#)

📍 Compared to households with same size and income in United States.

## 10 OUR ECOLOGICAL FOOTPRINT

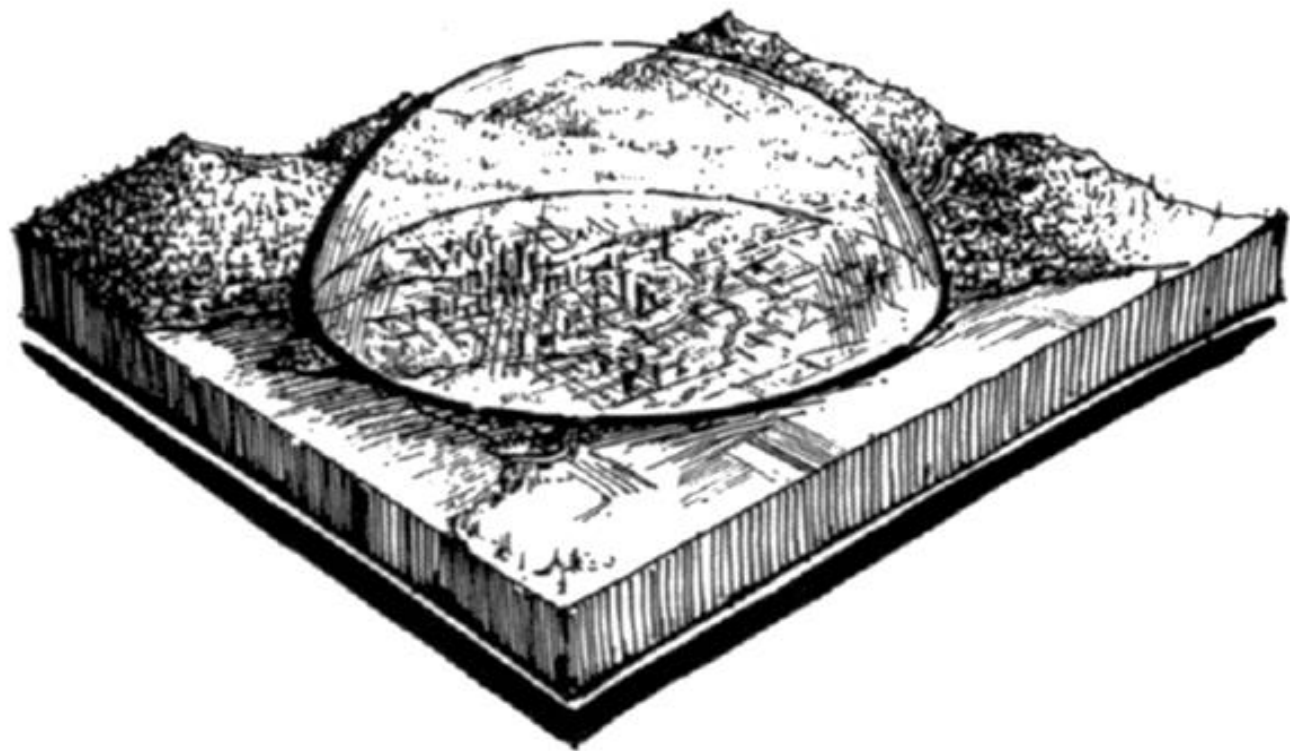
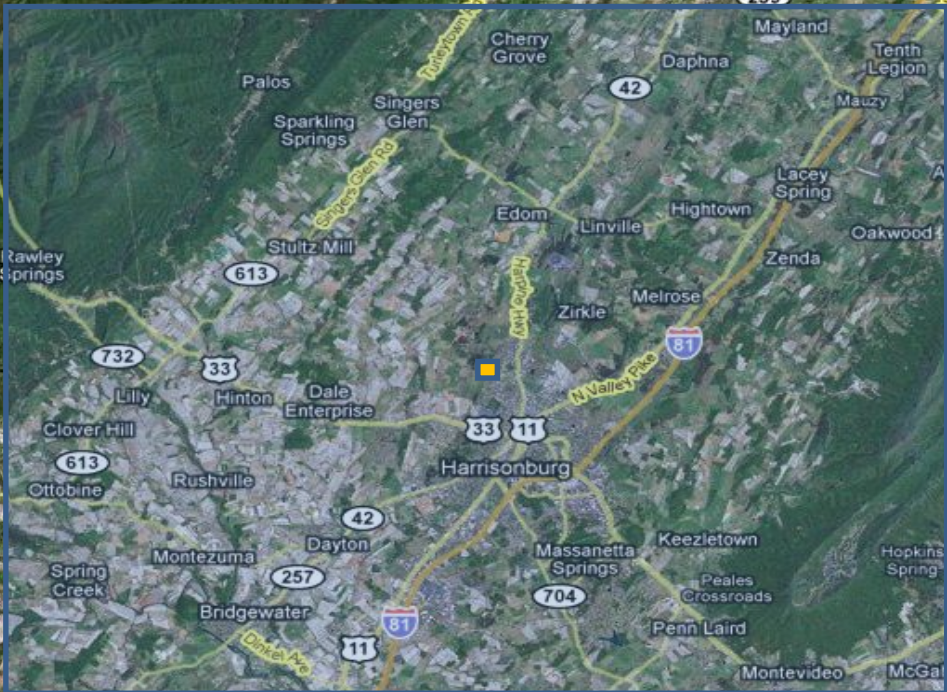
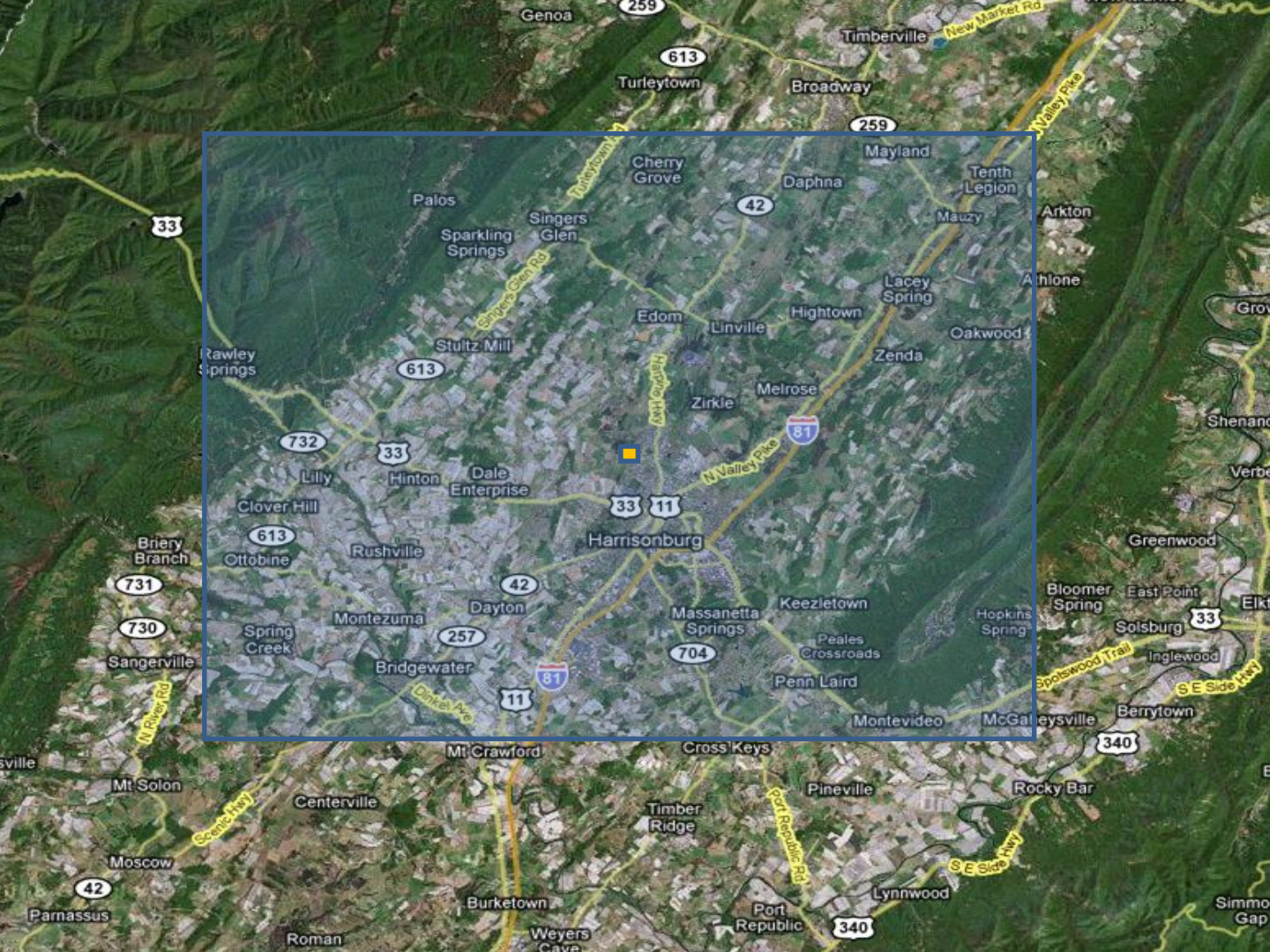


Figure 1.2: Living in a Terrarium.

How big would the glass hemisphere need to be so that the city under it could sustain itself exclusively on the ecosystems contained?



259

613

259

33

42

613

732

33

11

81

731

730

42

257

704

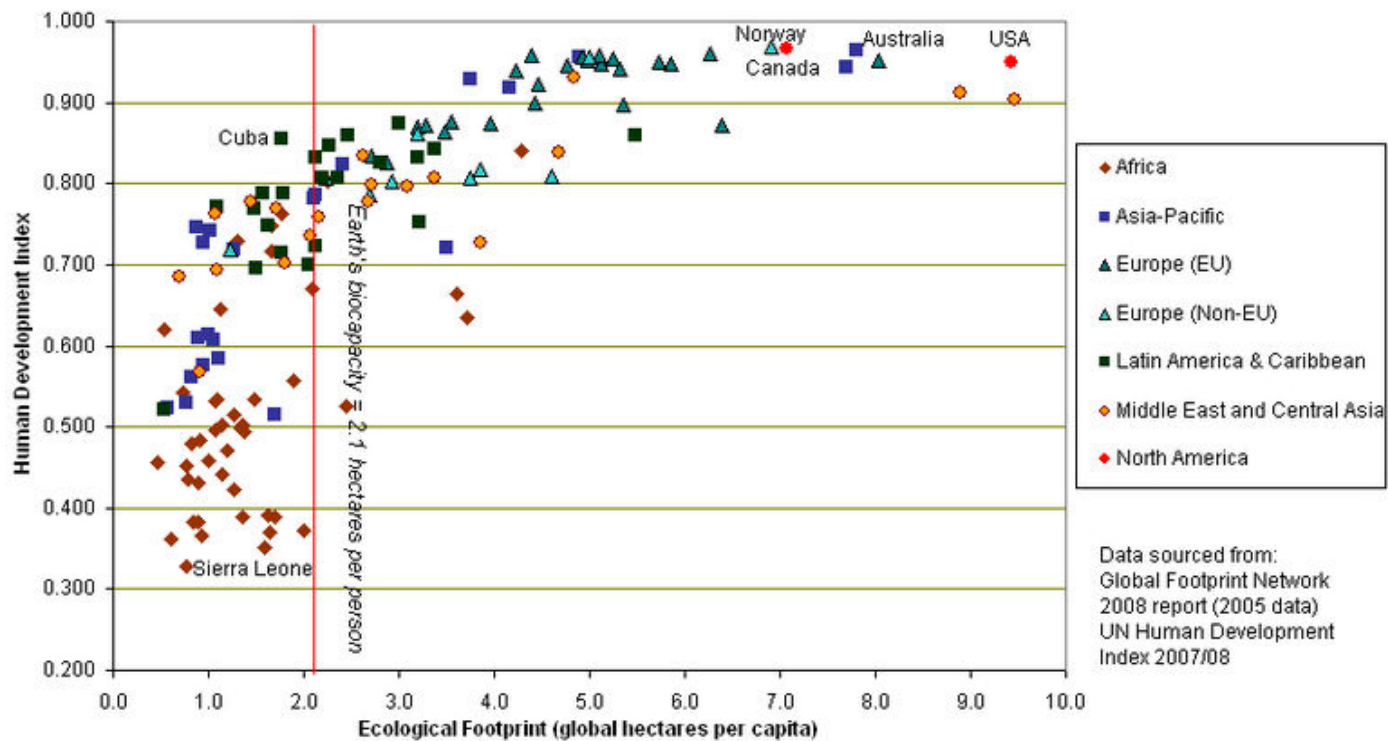
11

340

42

340

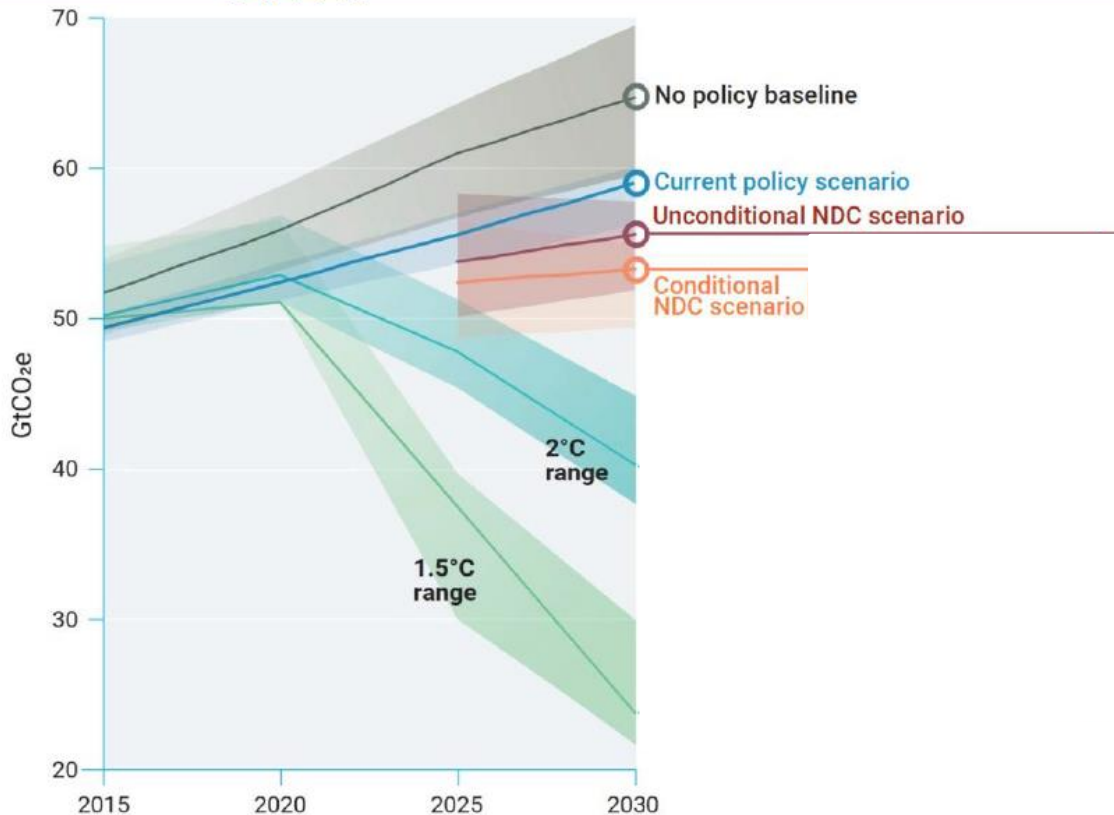
# Human Welfare and Ecological Footprints compared

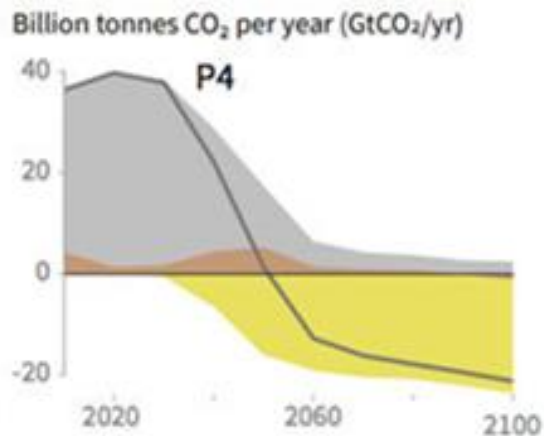
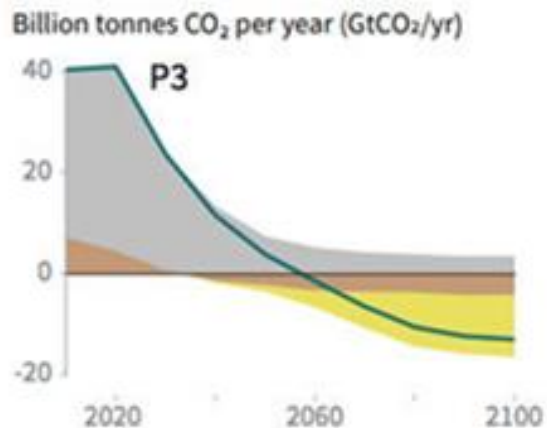
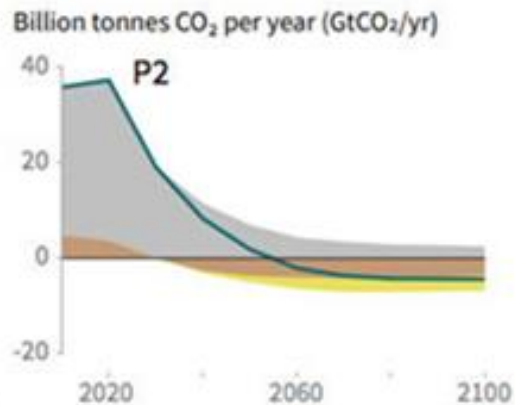
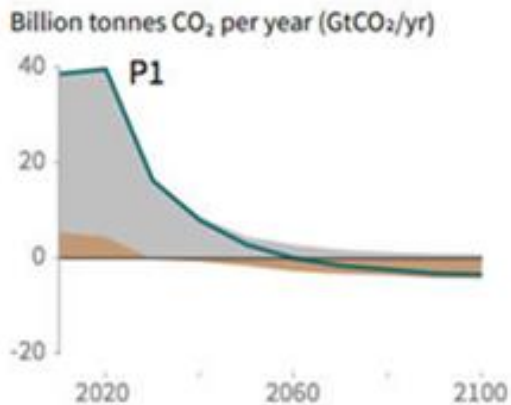




# NDC contributions and the emissions gap

Annual global total greenhouse gas emissions







# Drawdown - What does this tell us? What are the most impactful things society can do?



email sign up

donate

A large-scale photograph of a wind turbine nacelle being assembled at a construction site. Several workers in safety gear are visible around the base of the nacelle. The background shows a wooded area.

THE WORLD'S LEADING RESOURCE  
FOR CLIMATE SOLUTIONS.

[View the solutions](#)

As we enter a new decade,  
please consider donating to Project Drawdown.

[DONATE NOW](#)

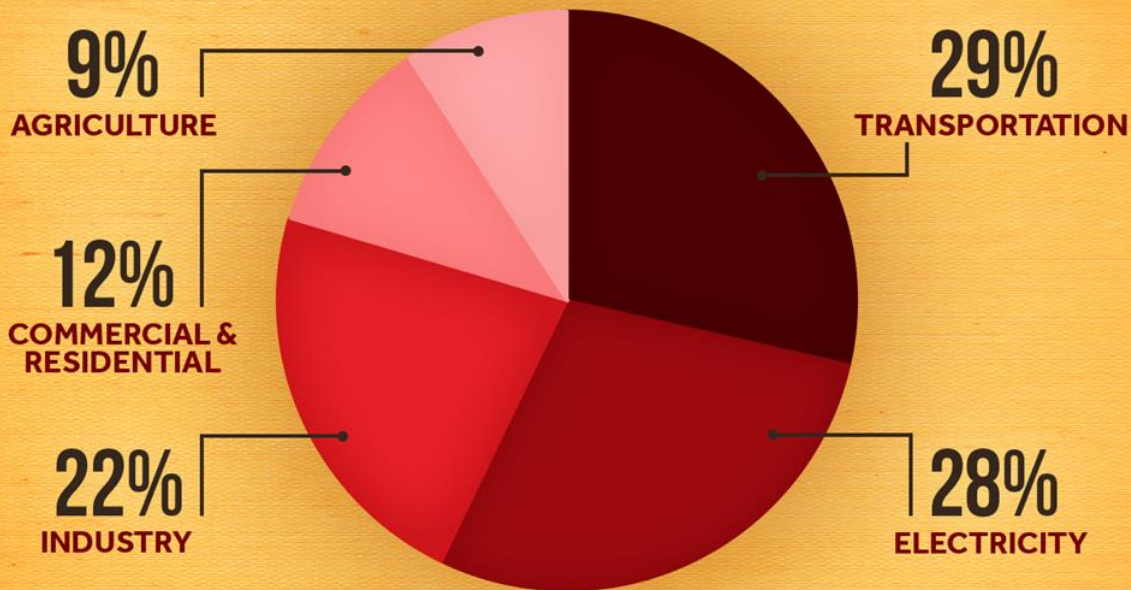
Rank	Solution	Sector	TOTAL ATN	NET COST (BILL)	SAVINGS (BILL)
1	Refrigerant Management	Materials	89.74	N/A	(\$902.77)
2	Wind Turbines (Onshore)	Electricity Generation	84.6	\$1,225.37	\$7,425.00
3	Reduced Food Waste	Food	70.53	N/A	N/A
4	Plant-Rich Diet	Food	66.11	N/A	N/A
5	Tropical Forests	Land Use	61.23	N/A	N/A
6	Educating Girls	Women and Girls	59.6	N/A	N/A
7	Family Planning	Women and Girls	59.6	N/A	N/A
8	Solar Farms	Electricity Generation	36.9	(\$80.60)	\$5,023.84
9	Silvopasture	Food	31.19	\$41.59	\$699.37
10	Rooftop Solar	Electricity Generation	24.6	\$453.14	\$3,457.63
11	Regenerative Agriculture	Food	23.15	\$57.22	\$1,928.10
12	Temperate Forests	Land Use	22.61	N/A	N/A
13	Peatlands	Land Use	21.57	N/A	N/A
14	Tropical Staple Trees	Food	20.19	\$120.07	\$626.97
15	Afforestation	Land Use	18.06	\$29.44	\$392.33
16	Conservation Agriculture	Food	17.35	\$37.53	\$2,119.07
17	Tree Intercropping	Food	17.2	\$146.99	\$22.10
18	Geothermal	Electricity Generation	16.6	(\$155.48)	\$1,024.34
19	Managed Grazing				
20	Nuclear				

70	Recycled Paper	Materials	0.9	\$573.48	N/A
71	Water Distribution	Buildings and Cities	0.87	\$137.37	\$903.11
72	Biochar	Food	0.81	N/A	N/A
73	Green Roofs	Buildings and Cities	0.77	\$1,393.29	\$988.46
74	Trains	Transport	0.52	\$808.64	\$313.86
75	Ridesharing	Transport	0.32	N/A	\$185.56

What is the biggest thing we do as society that contributes to emissions?

# GREENHOUSE GAS SOURCES

## UNITED STATES EMISSIONS BY SECTOR



Source: U.S. EPA 2017 (released 2019)

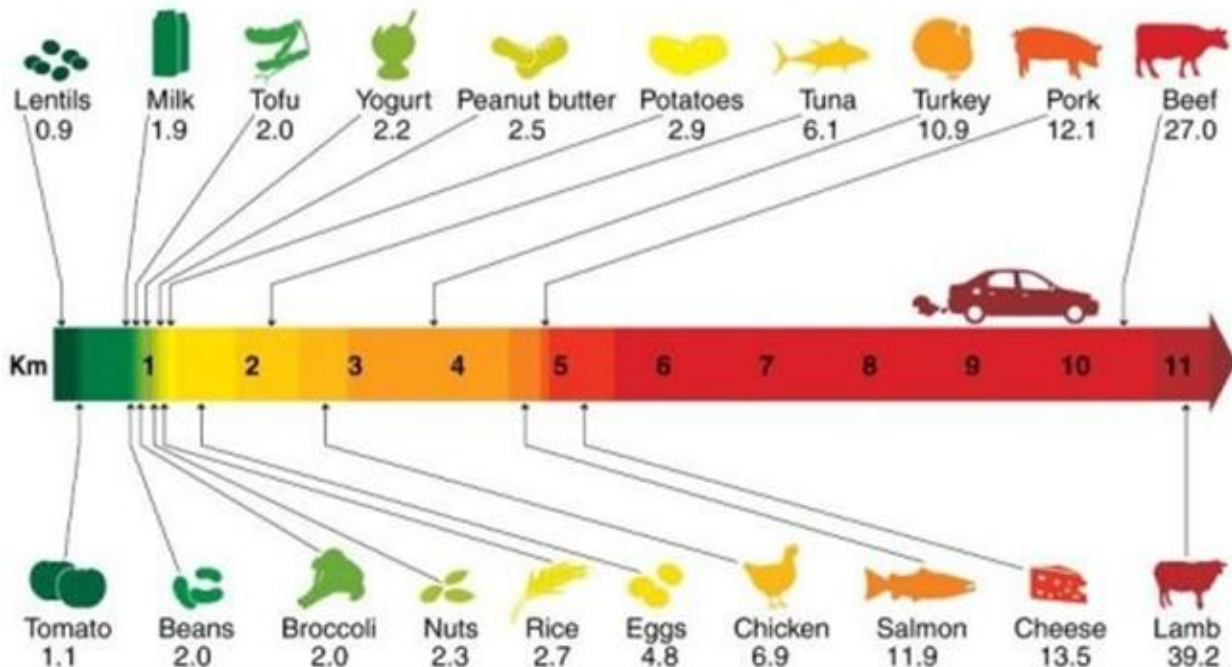
CLIMATE  CENTRAL

## Carbon footprint of what you eat

Calculations of greenhouse gas emissions from the production, processing and transportation of specific food items

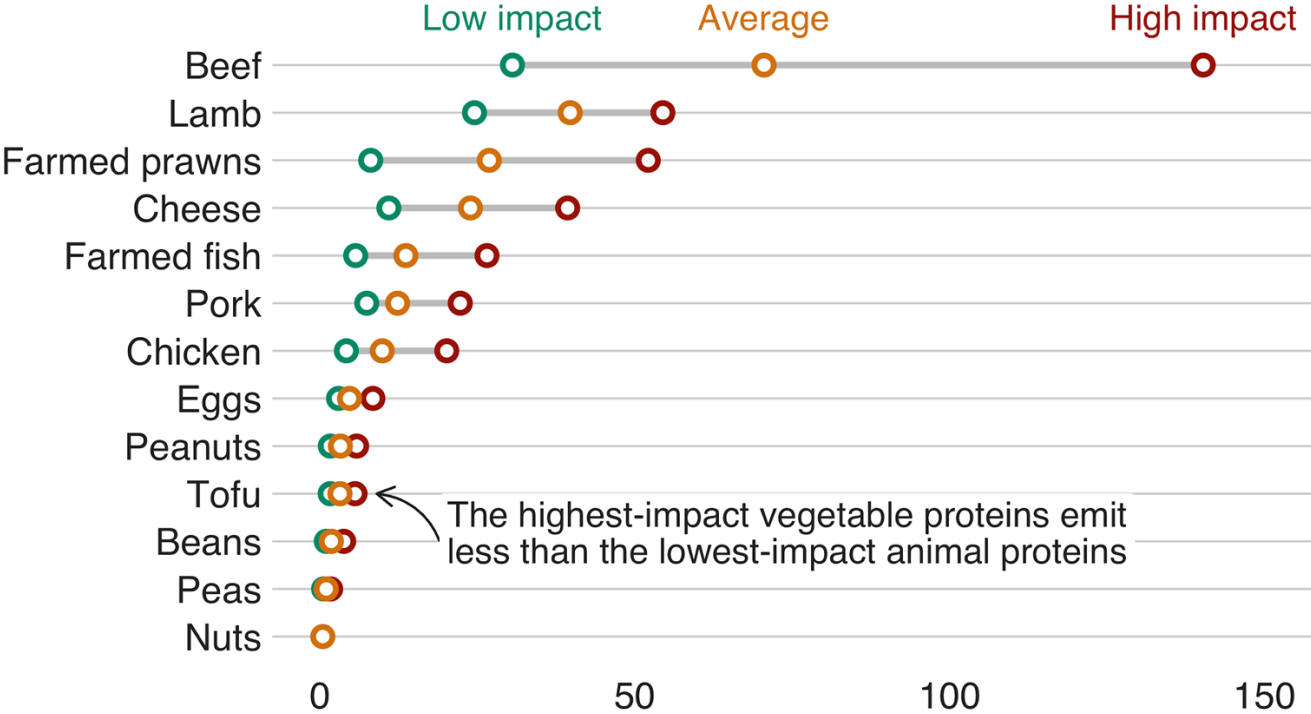
■ Main chart compares 110g of food against a journey in a midsize car

■ Number shows kg of carbon dioxide equivalent produced per 1kg of food



# Beef has the biggest climate impact

Greenhouse gas emissions per kilogram



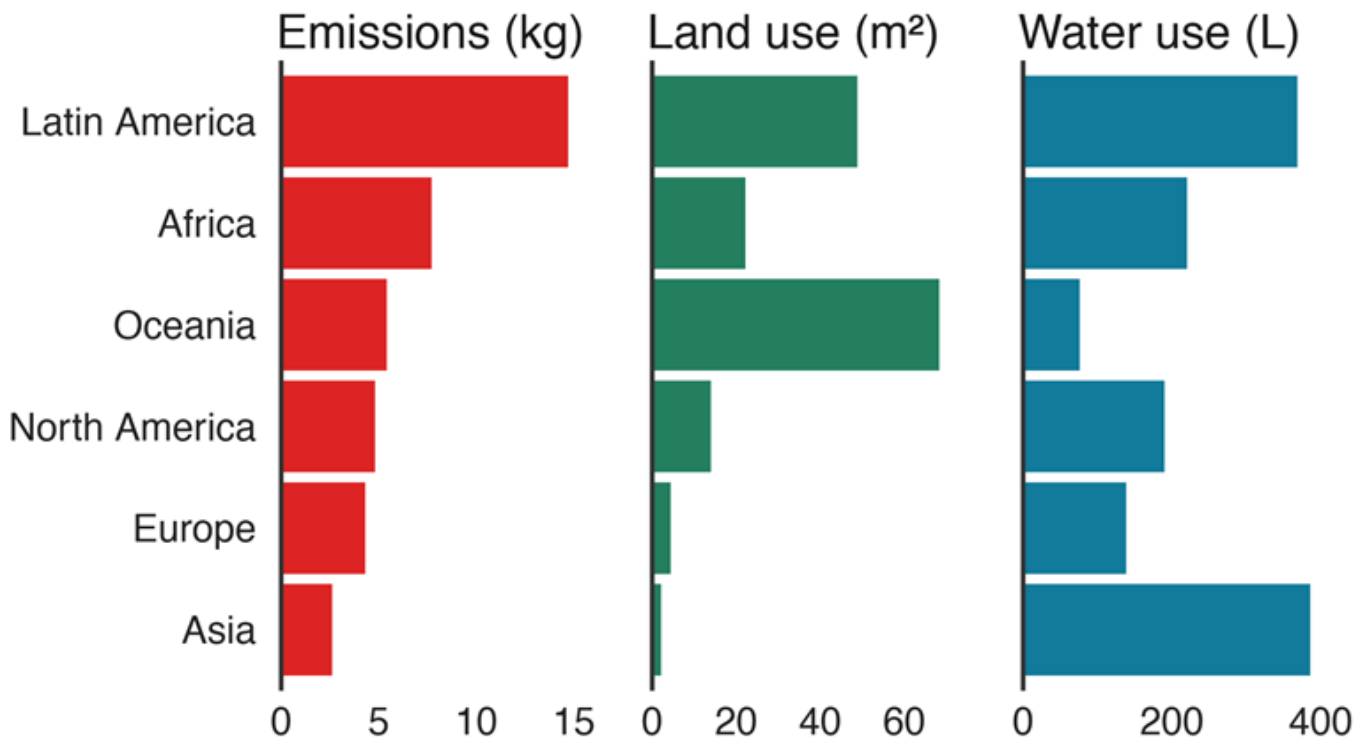
The highest-impact vegetable proteins emit less than the lowest-impact animal proteins

Source: Poore & Nemecek (2018), Science



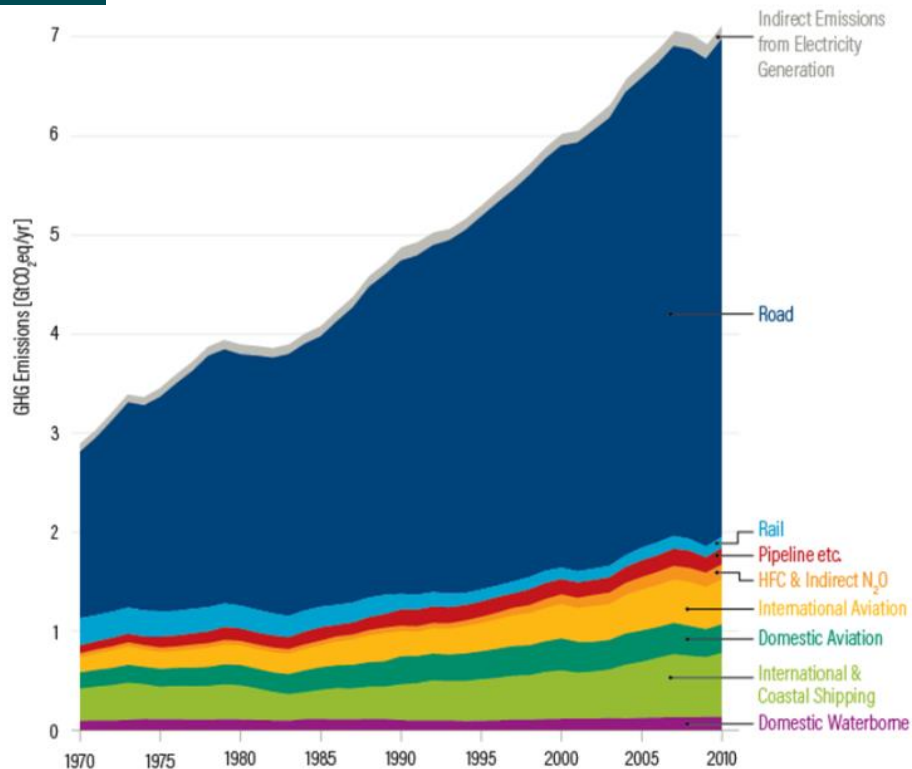
# The impact of beef is highest in Latin America

Climate footprint of one serving of beef by production region



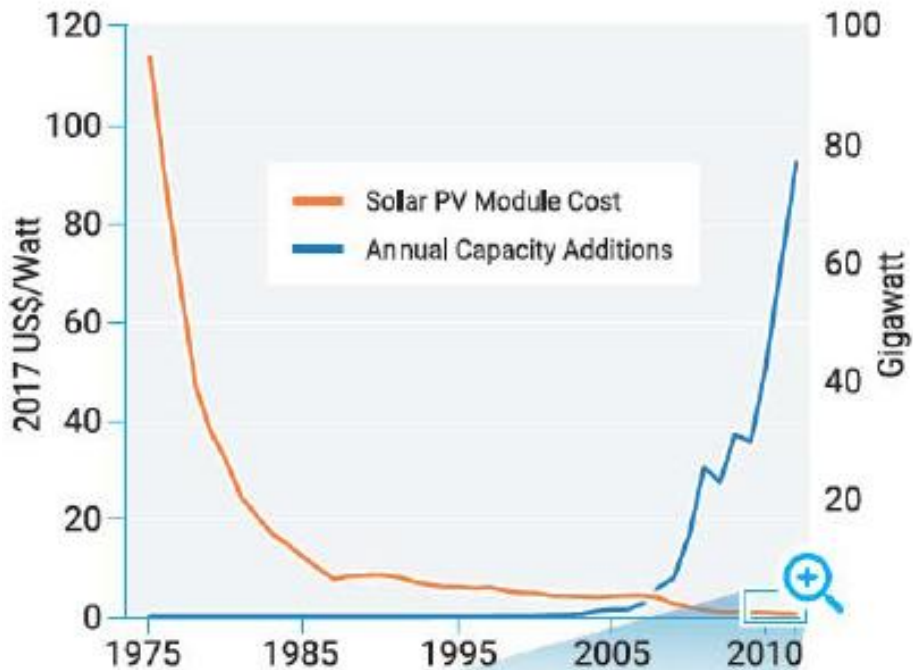
Source: Joseph Poore (Oxford University)

# Travel



Source: IPCC

# Solar Energy



### Gasoline

Enter amount of gasoline usage by gallons.

### Natural Gas

Enter amount of natural gas usage by therm.

### Liquid Propane

Enter amount of liquid propane used by gallons.

### Location (state)

This helps us determine your electricity tax based on the breakdown of energy usage in your state.\*\*\*

### Electricity

Enter electricity usage by kwh.

### Air Miles

Enter miles travelled by air.

---

### Your calculated carbon tax (in dollars)

\*These states use small amounts of petroleum for energy consumption, which we do not have a metric for yet. It is currently being charged as coal, but the difference should be minimal. Check back soon for an updated version of petroleum metrics!

\*\*Measured according to average global electricity consumption statistics, taken from [World Bank](#).

---



320 Watt x 100 panels = 32kW

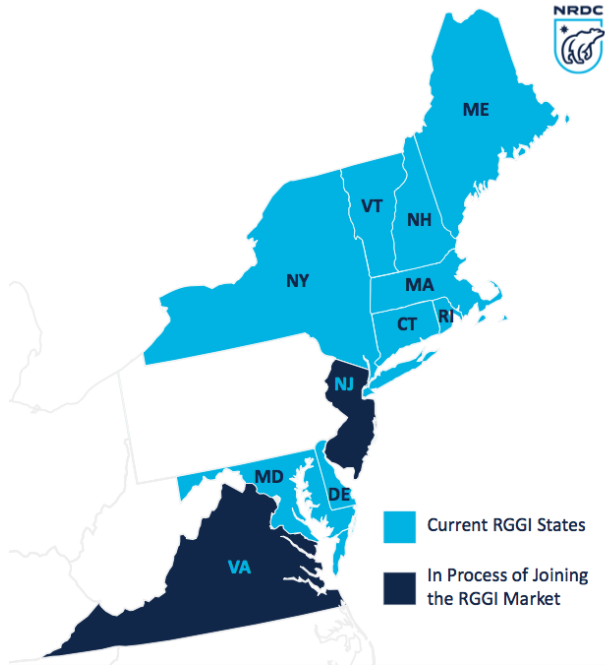
32kW x 6-12 h/day of sun = 200-400 kWh / day

USAGE HISTORY						
MO	YR	DOS	KWH	KWH/DAY	KW	
Nov	17	30	7500	250	40.60	
Oct	17	31	4400	142	30.28	
Sep	17	32	4260	133	25.40	
Aug	17	28	4440	159	23.60	
Jul	17	32	5500	172	27.60	
Jun	17	31	4000	129	30.40	
May	17	31	3840	124	32.80	
Apr	17	30	6080	203	47.20	
Mar	17	28	7980	285	28.00	
Feb	17	29	9240	319	47.60	
Jan	17	33	13760	417	74.00	
Dec	16	30	10740	358	47.60	
Nov	16	32	5360	168	40.00	



# Carbon Pricing

## Regional Greenhouse Gas Initiative



# Carbon Tax

## Buttigieg Supports a Carbon Tax, With Proceeds Going to Low- and Middle-Income People

By Susan Jones | February 19, 2020 | 7:49am EST



(CNSNews.com) - South Bend Mayor Pete Buttigieg, now running for the Democrat presidential nomination, supports legislation imposing a tax on carbon pollution.



Employees of SunEdison install photovoltaic solar panels on the roof of a Kohl's Department Store in Hillsborough, New Jersey. (Photo by Robert Nickelsberg/Getty Images)

The way he explained it at Tuesday night's CNN town hall, such a tax would combine a bit of wealth redistribution with green energy goals:

"Would you support a specific legislative proposal for a carbon tax and rebate?" a voter asked Buttigieg.



"I will," the candidate said.



EARTH DAY: USA

# EARTH DAY VIRGINIA

[HOME](#) > [EARTH DAY VIRGINIA](#)

SHARE   

Earth Day Virginia will leverage the power of [Earth Day 2020](#) to drive a

MENNONITE CREATION CARE NETWORK

ABOUT BLOG NETWORK CHURCHES MAKE IT GREENER ORGANIZATIONS DONATE f Q

# A NETWORK CARING FOR GOD'S CREATION

A ministry of Merry Lea Environmental Learning Center of Goshen College and Evendale

FIND CURRICULUM JOIN THE NETWORK CLIMATE RETREATS

**START HERE**  
 Assess Your Church >  
 Become a Liaison >  
 Green Patchwork >  
 Watershed Way >  
 Stories About Churches >  
 Church Listing >

**LOVING GOD**  
 Worship >  
 Vision & Leadership >  
 Christian Education >

**LOVING OUR PLACES**  
 Ecological Setting >  
 Buildings >  
 Grounds >

**LOVING OUR NEIGHBORS**  
 Simple Living >  
 At Church >  
 Eco-Justice >

# CREATION JUSTICE MINISTRIES

HOME CAMPAIGNS ABOUT DONATE ACTION RESOURCES CONTACT

## Earth Day Sunday 2020: The Fierce Urgency of NOW



Each year, Creation Justice Ministries offers Christian education materials to equip faith communities to protect, restore, and more rightly share God's creation.

Our 2020 theme is "The Fierce Urgency of Now." To connect with others who are planning Earth Day Sunday activities, join the [Earth Day Sunday 2020 Facebook Event](#).

DOWNLOAD ONLINE

*Our Christian education resources are made possible by grassroots free-will contributions. From Martin Luther King Day to Earth Day 2020, we are seeking 50 new Monthly Giving partners. Please prayerfully consider giving in the spirit of the fierce urgency of now. Thank you for your help!*

DONATE

*"We are now faced with the fact that tomorrow is today. We are confronted with the fierce urgency of now. In this unfolding conundrum of life and history, there 'is' such a thing as being too late. This is no time for apathy or complacency. This is a time for*

