INEQUALITIES OF CLIMATE CHANGE: HOW DO CONTRIBUTIONS TO AND DAMAGE FROM CLIMATE CHANGE DIFFER AMONGST SPACE (COUNTRIES) AND TIME (GENERATIONS)

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This short overview puts forward some key figures about how do different age groups and countries both contribute and suffer from climate change. This will give a basis of how a zero sum-game approach should change.

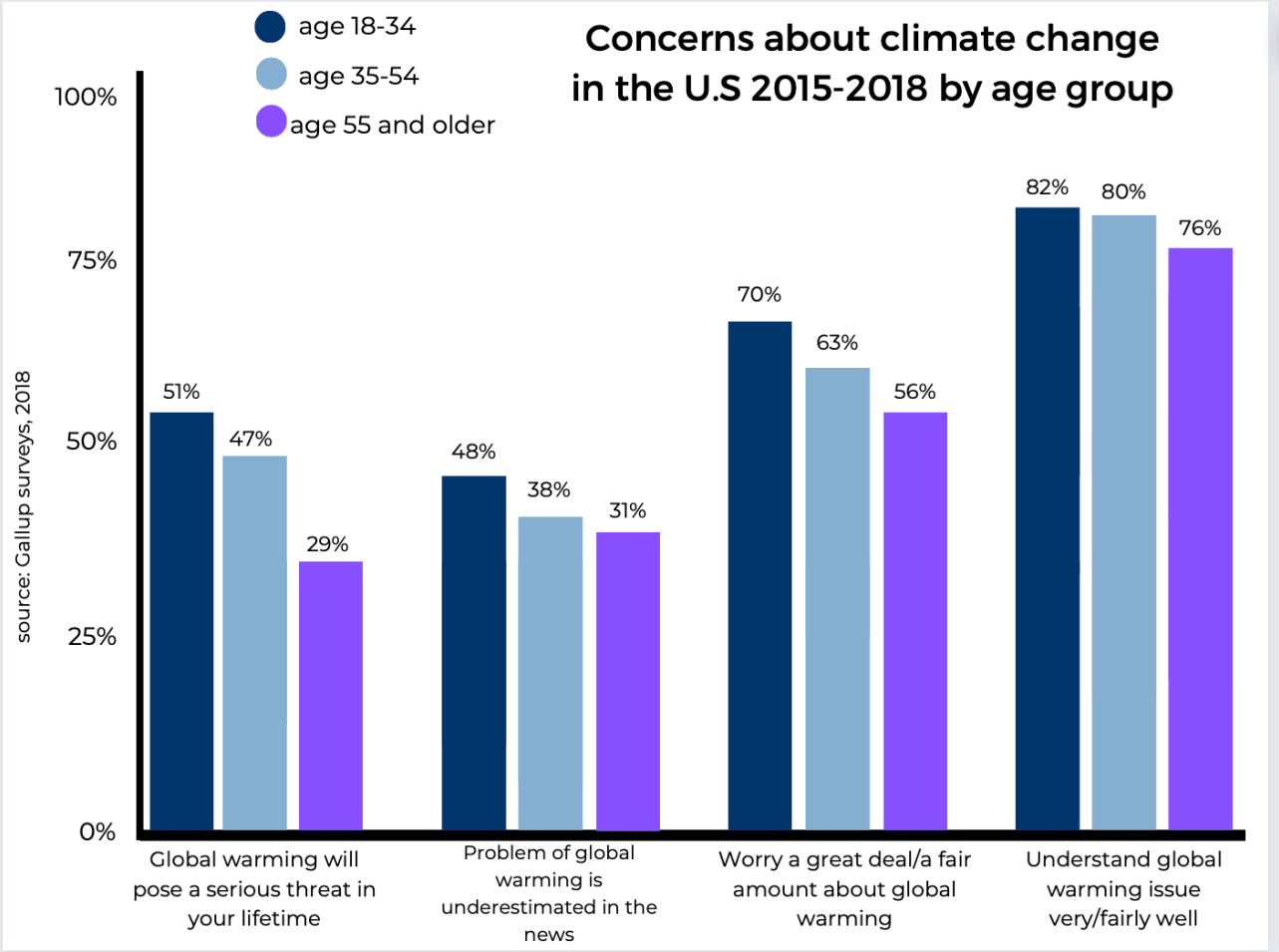
Generations and concerns about global warming in the US

Between 2015 and 2018, there was relevant public concern about global warming across all age groups in the U.S, as shown by a survey conducted by the American analytics and advisory company Gallup.[2]
However, **concerns significantly vary between different age groups**: 70% of people aged 18 to 35, who are typically more engaged with the issue of climate change, are worried

[1] VISION working group includes Margherita Curti, Clara Donati and Francesco Grillo.
[2] https://news.gallup.com/poll/234314/global-warming-age-gap-younger-americans-worried.aspx

about global warming. On the other hand, 56% of people who are 55 and older are fairly concerned about the issue.

The most noticeable generational gap can be seen in the concern that global warming will pose a serious threat in one's lifetime: 51% of adults under age 35 do believe this will happen, whereas only 29% of people older than 55 think that. This reflects the different perception of the issue for younger and older people, as the latter have less time in their lifetime for the effects of climate change to be realized. Younger people also tend to think that the problem of global warming is underestimated by the news and to better understand the issue compared to people who are older than 55.

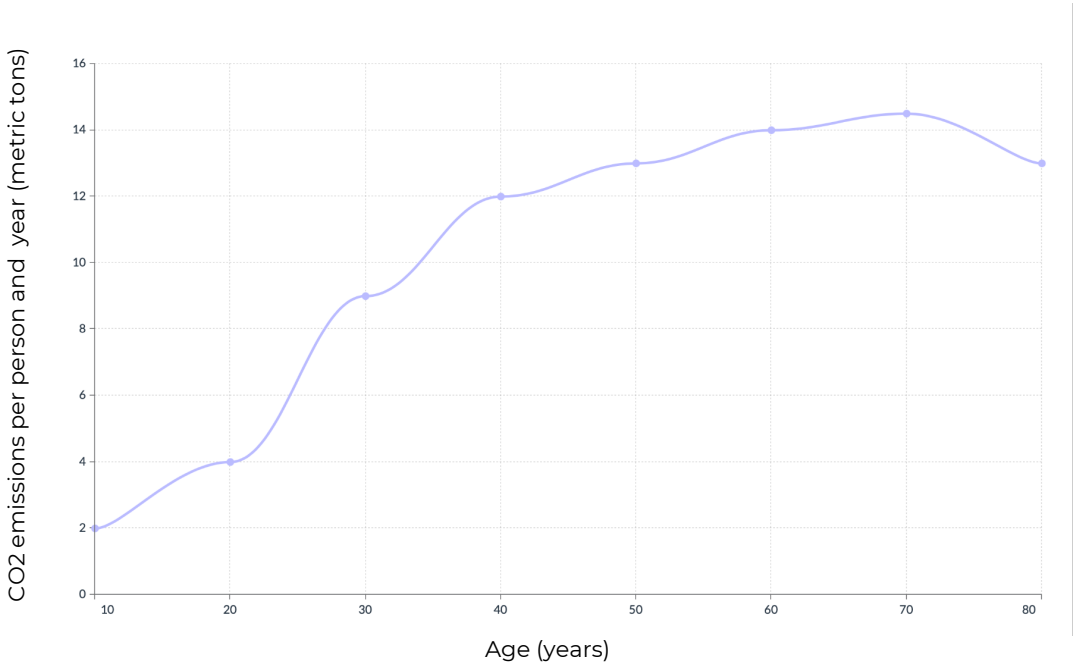


Age and CO2 emissions

Many studies and projections about carbon dioxide emissions take the overall size of the population into account, without considering the age distribution of emissions. A study conducted by Emilio Zagheni, a demographer at the Max Planck Institute for Demographic Research, showed that the individual CO_2 emissions of the average American tend to increase until the age of 65 and then decline in old age. In other words, most Americans reach their CO_2 emissions peak (around 14.9 metric tons per person) right before retirement. This data is relevant especially if we consider that, according to the United Nations, the worldwide share of people aged 65 and older will increase from around ten percent currently (2022) to around 13 percent by 2030.
This means that societies with an increasing share of elderly people will tend to have higher CO_2 emissions—at least in countries with consumption patterns similar to those of the U.S.A. Of course, CO_2 emissions tend to increase in a person's lifetime as income often grows with age and older adults tend to drive, fly and consume more electricity than younger people. However, once people enter retirement, these trends shifts: older people tend to consume less gasoline as they spend more time at home, and their expenses are usually directed to healthcare instead of clothes or travels.

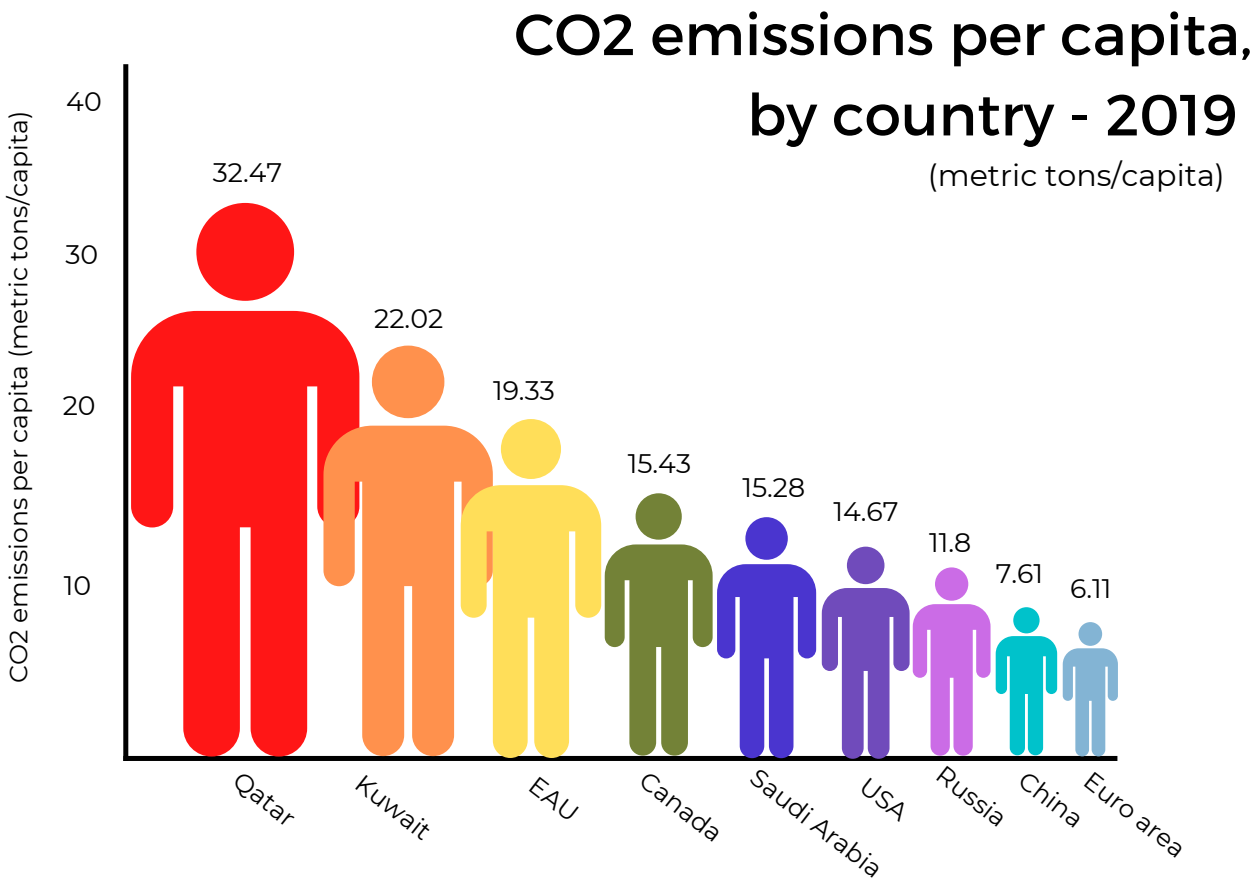
Age distribution of annual CO2 emissions of an average U.S. resident

Source: Max-Planck-Gesellshaft, 2011



Per capita emissions per country

There are large inequalities in per capita CO_2 emissions around the world.
The highest CO_2 emissions per capita can be found in the major oil producing countries[3] (such as Qatar, Kuwait, Bahrain, United Arab Emirates).
However, since many of these countries have a relatively small population, their total annual emissions are quite low when compared to other countries. Countries with a larger population and the highest individual emissions (USA, Canada) also have high total emissions.



Source: World Bank, 2020

[3] https://data.worldbank.org/indicator/EN.ATM.CO2E.PC

How did CO_2 emissions per capita vary over time

The “footprint” of an average individual varied for countries through the years. The average US citizen in 1950 left a footprint of 16 tons of CO_2 (per year), while in 1970 per capita CO_2 emissions were of 20.71 tons per year.