

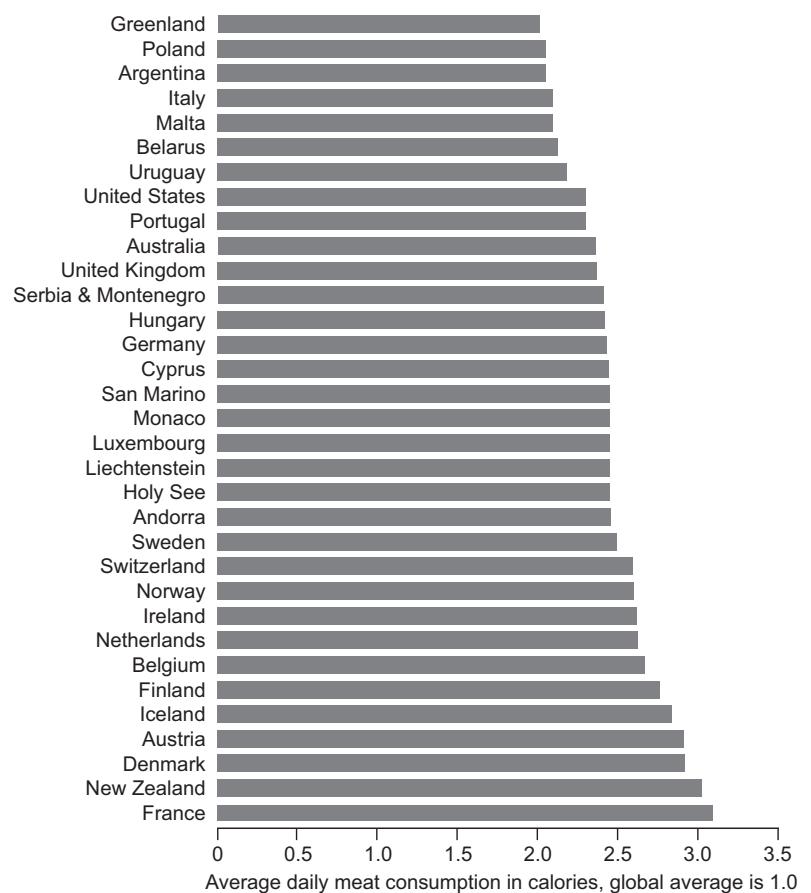
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The global map of who eats too much meat

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International data on the consumption of meat and fish is not especially reliable. We know that collectively humanity eats far too much meat and that the amount we are eating, farming and killing, is increasing rapidly – but we sometimes make the mistake of assuming that this is widespread. It is not. Just a few of us are eating far more meat than most of us – almost certainly to the dis-benefit of the populations in affluent countries that can afford to over-consume the most. A lot of meat is not good for you. The graph in Figure 1 shows average meat consumption from almost twenty years ago for those countries that over-consumed the most then. They still do, far more in most cases.

Figure 1: Calorie intake from meat per person compared to global average (consumers of the most meat), 1997



Note: Data shows all countries twice the average and above

Source: Calculations based on data from Worldmapper:
<http://www.worldmapper.org/display.php?selected=126#>

Source: United Nations Environment Programme (UNEP) (2005): Series: average total calorie supply from animal products – per capita per day sourced in turn from The Food and Agriculture Organization of the United Nations (FAO's) statistical database – data refers to 1997 and may include fish in some cases.

Before looking at the global map of over-consumption is it worth considering just how much meat there is in the world. A great deal of all the meat is made up of humans. When world population passed seven billion people in 2011 we humans weighed, in total, 350 million tonnes. That weight is rising rapidly as our numbers are still rising and we are getting heavier. Back in 2011 each of us weighted, on average just under 8 stone.¹ Around two billion of us were children then, and there were more people underweight than overweight worldwide. Since then the number that are overweight has been rising. The proportion of the population who are children has been falling, as fertility has been falling. We are having fewer and fewer children. Peak baby was in 1990, but the human population continues to rise because of ageing. Most of the growth in human population predicted in the next few decades will be as a result of that ageing.

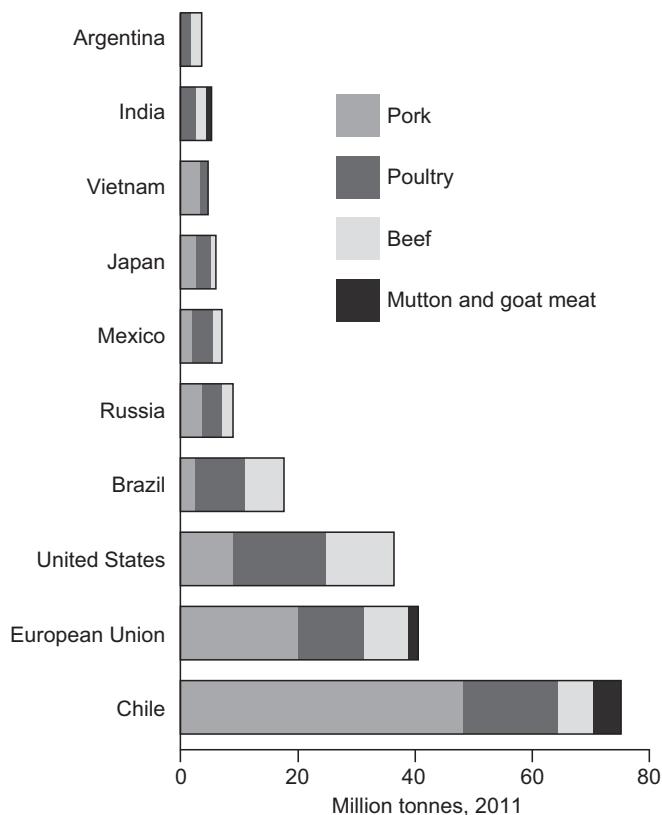
By total accumulated weight humans are already the heaviest animals on the planet, except for the ones we farm for their meat. This includes some 1.4 billion cattle that weight 520 million tonnes worth at any one time. After that there are the 1.1 billion sheep making up some 65 million tonnes in total planetary sheep weight. After them there are the 18.6 billion chickens, weighting 40 million tonnes worldwide and by far the most populous birds on the planet today. If we ignore the fish in the oceans, and the insects, then the vast majority of animal life on earth by weight is either us, or what we farm to eat. We have taken over the planet.

Meat eating is not just bad for the humans who eat too much meat – it is also very bad for global warming: “The global livestock industry produces more greenhouse gas emissions than all cars, planes, trains and ships combined, but a worldwide survey by Ipsos MORI in the report finds twice as many people think transport is the bigger contributor to global warming.”²

¹ <http://www.npr.org/sections/thetwo-way/2011/11/03/141946751/along-with-humans-who-else-is-in-the-7-billion-club>

² Carrington, D. (2014) Eating less meat essential to curb climate change, says report, The Guardian, December 3rd, <http://www.theguardian.com/environment/2014/dec/03/eating-less-meat-curb-climate-change>

Figure 2: Countries that consume the most meat in the world in total (2011 absolute, by weight)



Source: FAOSTAT, *The Guardian*, December 3rd, 2014

However there is good news: A survey by the Eating Better Alliance in 2014 found that “more than a third of people in the UK (35%) report they are willing to eat less meat, with one-in-five (20%) saying they have cut back in the last year.”³

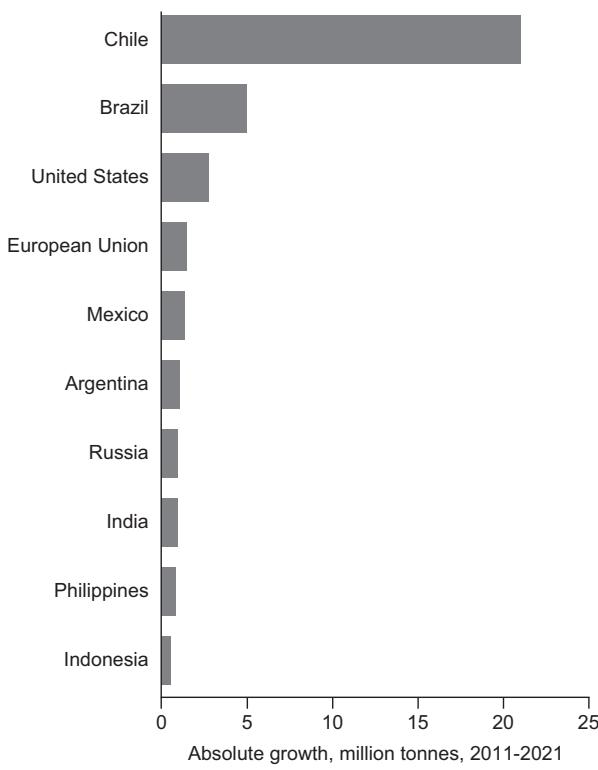
Of all sources of meat it is beef that is most harmful to the environment. Another study in 2014 found that “...cutting subsidies for meat production would be the least controversial way to reduce its consumption.”⁴ That study also argued that although some beef production is carried out on land that might not be suitable for other forms of agriculture: “the objection ignores other societal benefits

³ Dibb, S. and Fitzpatrick, I. (2014) Let's talk about meat: changing dietary behaviour for the 21st century, Brighton: Eating Better, <http://www.eating-better.org/uploads/Documents/Let'sTalkAboutMeat.pdf>

⁴ Prof Gidon Eshel, of Bard College in New York state quoted in Carrington, D. (2014) Giving up beef will reduce carbon footprint more than cars, says expert, *The Guardian*, July 21st, <http://www.theguardian.com/environment/2014/jul/21/giving-up-beef-reduce-carbon-footprint-more-than-cars>

those arid lands may provide, notably ecosystem services and biodiversity. It further ignores the ≈ 0.16 million km² of high-quality cropland used for grazing and the ≈ 0.46 million km² of grazing land east of longitude 100°W that enjoy ample precipitation and that can thus be diverted to food production. Even when focusing only on agricultural land, beef still towers over the other categories.⁵

Figure 3: Countries projected to increase absolute total meat consumption the most, by weight, 2011–2021



Source: FAPRI-ISU, *The Guardian*, December 3rd, 2014

There is a huge variation in meat consumption in the rich world today, which suggests that change is possible. Table 1 shows countries of the world ranked by how much meat people in each consume a year (excluding fish). In the top five more than twice as much meat is consumed per person as in Japan, the country with the least consumption of meat. Other forms of over-consumption such as of gasoline and of goods that have to be thrown away in general is more common in the more meat greedy countries.

⁵ Eshel, G., Shepon, A., Makov, T. and Milo, R. (2014) Land, irrigation water, greenhouse gas, and reactive nitrogen burdens of meat, eggs, and dairy production in the United States PNAS 2014 111 (33) 11996-12001; published ahead of print July 21, 2014, doi:10.1073/pnas.1402183111

Table 1: The Environment – Meat, Gasoline and overall waste – latest data

Country	Population	Meat consumption (kg/capita/year)	Consumption of motor gasoline (barrels/capita/year)	Waste (kg/capita)
New Zealand	4505800	126.90	4.31	621
Australia	23342600	121.10	5.23	637
United States	320050700	117.60	10.08	717
Austria	8495100	106.40	1.65	577
Israel	7733100	102.00	2.93	633
Spain	46927000	93.10	0.84	446
Canada	35181700	92.20	8.55	382
Portugal	10608200	90.30	0.85	433
France	64291300	88.70	0.99	542
Germany	82726600	87.90	1.88	602
Italy	60990300	86.60	1.25	485
United Kingdom	63136300	82.80	1.77	489
Slovenia	2072000	82.00	1.83	412
Sweden	9571100	81.90	2.43	460
Greece	11128000	80.60	2.06	502
Ireland	4627200	80.50	2.19	589
Belgium	11104500	76.80	0.94	442
Denmark	5619100	75.20	2.04	746
Switzerland	8077800	74.70	2.93	707
Finland	5426300	74.40	2.42	494
Netherlands	16759200	72.70	2.04	528
Singapore	5411700	71.10	1.35	..
Norway	5042700	65.90	1.60	499
South Korea	49262700	62.20	1.42	365
Japan	127143600	48.80	2.77	356

Source: Stotesbury, N. and Dorling, D. (2015) Understanding Income Inequality and its Implications: Why Better Statistics are Needed Statistics Views, 21st October

The map series in Figure 4 summarises the trends and inequalities in global meat consumption discussed above. It shows the meat consumption in three different perspectives. The grey-black shades highlight where the population of a country consumes more meat than the global average. The countries shown in white show the countries that consume below the global average.

In the top map this is shown from a conventional perspective using a normal map projection (here the so-called Robinson projection). It is the picture that we are most used to, while the other two maps are cartogram depictions where the countries are resized according to some variable: In the first cartogram (map in the middle), it is population that defines the size of a country. Countries with large populations are made bigger, while less populated countries are proportionally smaller. Europe as a densely populated continent therefore appears bigger, showing the larger impact of the high meat consumption there, while countries with an above-average meat consumption but much smaller populations almost disappear, as it is the case with Russia and Canada. Most of the countries with below-average meat consumption – mostly in the poorer parts of the world – also stand out, as these have large populations.

In the third map (at the bottom), these countries disappear. This cartogram shows the excess meat consumption in the world. It is a combination of population numbers and the amount of meat consumed above the global average. This data is calculated by using the global average meat consumption per person compared to a country's average. The difference is then multiplied by the country's population to show how much more meat is consumed there in total when comparing this to the global average. All countries that are below the average therefore disappear, while those countries that consume excessively more are proportionally bigger. China, for example, with its much larger population than the USA is smaller because of the much higher meat consumption in the USA. Even Australia and New Zealand which almost disappear on a population cartogram become much more prominent on this cartogram caused by their unsustainably high proportions of meat on their dinner plates.

Figure 4: Global above-average meat consumption
Global above-average meat consumption

