



## Time for change

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### Are cows the cause of global warming?

A cow does on average release between 70 and 120 kg of Methane per year. Methane is a greenhouse gas like carbon dioxide (CO<sub>2</sub>). But the negative effect on the climate of Methane is 23 times higher than the effect of CO<sub>2</sub>. Therefore the release of about 100 kg Methane per year for each cow is equivalent to about 2'300 kg CO<sub>2</sub> per year.

Let's compare this value of 2'300 kg CO<sub>2</sub>: The same amount of carbon dioxide (CO<sub>2</sub>) is generated by burning 1'000 liters of petrol. With a car using 8 liters of petrol per 100 km, you could drive 12'500 km per year (7'800 miles per year).

World-wide, there are about 1.5 billion cows and bulls. All ruminants (animals which regurgitates food and re-chews it) on the world emit about two billion metric tons of CO<sub>2</sub>-equivalents per year. In addition, clearing of tropical forests and rain forests to get more grazing land and farm land is responsible for an extra 2.8 billion metric tons of CO<sub>2</sub> emission per year!

According to the *Food and Agriculture Organization of the United Nations* (FAO) **agriculture is responsible for 18% of the total release of greenhouse gases world-wide** (this is more than the whole transportation sector). Cattle-breeding is taking a major factor for these greenhouse gas emissions according to FAO. Says Henning Steinfeld, Chief of FAO's Livestock Information and Policy Branch and senior author of the report: "Livestock are one of the most significant contributors to today's most serious environmental problems. Urgent action is required to remedy the situation."

Livestock now use 30 percent of the earth's entire land surface, mostly permanent pasture but also including 33 percent of the global arable land used to producing feed for livestock, the report notes. As forests are cleared to create new pastures, it is a major driver of deforestation, especially in Latin America where, for example, some 70 percent of former forests in the Amazon have been turned over to grazing.

### Are cows to blame for global warming? Are cattle the true cause for climate change?

We cannot deny that farming has a major impact on global warming. Since farming is basically serving the consumer's demand for food, we should look at our nourishment. With increased prosperity, people are consuming more meat and dairy products every year. Global meat production is projected to more than double from 229 million tonnes in 1999/2001 to 465 million tonnes in 2050, while milk output is set to climb from 580 to 1043 million tonnes.

A Japanese study showed that producing a kilogram of beef leads to the emission of greenhouse gases with a global warming potential equivalent to 36.4 kilograms of carbon dioxide (CO<sub>2</sub>). It also releases fertilising compounds equivalent to 340 grams of sulphur dioxide and 59 grams of phosphate, and consumes 169 megajoules of energy (Animal Science Journal, DOI: 10.1111/j.1740-0929.2007.00457.x). In other words, a kilogram of beef is responsible for the equivalent of the amount of CO<sub>2</sub> emitted by the average European car every 250 kilometres, and burns enough energy to light a 100-watt bulb for nearly 20 days (New Scientist magazine, 18 July 2007, page 15 ).

The following tables indicates the CO<sub>2</sub> production in kg CO<sub>2</sub> equivalents per kg of meat depending on the animal:

1 kg of meat from	produces kg CO <sub>2</sub> e
beef	34.6
lamb	17.4
pork	6.35
chicken	4.57

Source: Environmental Impacts on Food Production and Consumption.

[http://www.defra.gov.uk/science/project\\_data/DocumentLibrary/EV02007/EV02007\\_4601\\_FRP.pdf](http://www.defra.gov.uk/science/project_data/DocumentLibrary/EV02007/EV02007_4601_FRP.pdf)

### Conclusion: Eat less meat and dairy products

The most important conclusion for ourselves is: **Eat much less meat and dairy products. This is one of the most effective ways to reduce our personal carbon footprint and to generally reduce our personal negative impact on the environment.**

Finally a quote from Albert Einstein (Nobel prize 1921): Nothing will benefit human health and increase chances for survival of life on Earth as much as the evolution to a vegetarian diet.

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## Comments

### CO2 emission of food

25 November, 2008 - 18:52 — juerg

Thank you for the hint. I've corrected it.

[reply](#)

### CO2 emission of food / meat as cause for global warming

6 December, 2008 - 16:28 — juerg

Your reasoning about vegetables is wrong. It requires much less land to produce enough vegetables to feed a person. Producing meat to feed a person requires much much more land! The table below shows the amount of food required to gain 1 kg additional weight for main species:



On the land required to produce 1 kg of meat, about 200 kg of potatoes could be produced! If all Americans would consume only 10% less meat, the amount of economized corn could feed 1 billion people!

The cattles you mentioned have indeed been around a long time ago. But they were grass fed, sustainably raised in a natural and environmental friendly way. Today's cattle breeding however is factory farming (feedlots) causing a lot of additional problems (e.g. nitrous oxides from fertilizers, etc).

There is nothing wrong with naturally grown, grass-fed cattles. But these are very rare species! At least 95% of all meat is produced in feedlots (factory farming).

But let me repeat again: Much less meat can be produced per square meter land with grass-fed grazing cattles compared to feedlots. So **the rich western world need to dramatically cut their meat consumption** to make the change back from feedlots into grazing, environmental-friendly and outdoor-living cattles realistic.

Juerg

[reply](#)

### Grazing cattles as solution to global warming?

7 December, 2008 - 15:03 — juerg

Interesting link. However **it is important to see the difference between naturally grown, grazing cattles and the current cattle breeding factories**. There is simply not enough land available to breed the current number of cattles in an environmentally friendly way.

Therefore it is inevitable to reduce the average meat consumption in the rich part of the world.

[reply](#)

### global warming? how much we care?

30 April, 2009 - 12:13 — AndersonG

Global warming is a very sensitive issue that we must not ignore. We can't blame cows or those farms for this phenomenon. All human is responsible for these. Everyday, each person contributes largely to the global warming unconsciously. Riding a car, or throwing a piece of plastic or paper. Many companies are promoting eco-friendly products like natural spices, biodegradable plastics, electric cars like peapod car and the likes. But what really is the real probability that these acts can really contribute to prevent global warming. Further studies is needed to understand carefully the real aspects in this phenomenon.

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**For whom enough is too little - nothing is ever enough.**