Global Warming and Eating Habits

Contents

1 Introduction

This paper discusses the subject of eating habits and their influence on global warming which has become more and more prominent in the past decade, especially the question of whether meat is 'bad for the planet'.

I would say the gradual warming of the planet and the recent coronavirus lockdowns should also expose the need for measures of personal preparation in case of a worst case scenario with supply chain issues, natural disasters etc. However I consider it to be more important discussing preventive measures which work and discussing those that have been popularized while not actually working, which everyone can think about now.

2 Preventive measures you can take

•Eating habits - Is Meat bad for the planet?

- we could nourish 3.5 billion people if we just ate the stuff we feed to animals
- About 3 quarters of all agricultural land is used for livestock.
- One quarter pound hamburger requires over 660 gallons of water to produce.
- the livestock sector is responsible for 15% of all global manmade emissions
- A solution to climate change would be to stop eating animals
are some of the things that you will hear, however is that all of it? Let's look at these claims.

Do animals really take all the water?—

The water input that people assign to beef is mainly rain water, which would fall on that land with cattle present and without cattle present, going into the animal mainly in the form of food, the liquids mainly not staying in the animal more than the liquids that you drink in the morning. A typical cow's water footprint is 94% rain water [1]

Sure, this is still then more freshwater used for cows than for things like bread, however it is considerably less than for say Californian Almonds, and consider the fact that to survive we don't just need a certain amount of calories, but also need protein, from there comparing the amount of fresh water used for 200g of beef compared to that used for 200g of rice has beef using more fresh water, however this is with beef providing roughly 3-5 times the proteins, and highly nutrient-dense foods, like liver. [2]

Do animals really take all the food?—

Let's adress this next, 84% of all that is fed to animals is not edible for humans, and the 16% of it which is edible mainly goes to chicken and pigs as they are monogastric animals, similar to humans. However for the other species over 90% of what is fed to animals is non-human edible, making useful many things such as crop byproducts when growing food for people. [3]

When you grow corn what do you do with the husks and the other stuff that comes out of the ground? Taking all things into account livestock takes 43.2 Billion KG of inedible food making them into edible animal food. So the number becomes 2.8kg of edible food in ruminant systems (systems with ruminant animals) and 3.2kg in monogastric systems. [4]. And in addition to that animals as mentioned take excess grain calories and turn them into a high quality efficient source of protein. Animal foods currently provide 48% of protein in the average diet, but only 24% of the calories.

Do animals really take all the land?—

Roughly 2/3 of all agricultural land are what is called marginal, only the rest being arable, and only ruminant lifestock can make use of it because they can eat grass that is high in celulose which they can digest and convert because of microbes in their digestive track which can make that conversion. So the remaining 1/3 is the land where you can grow crops. Half of all fertilizer also come from animals, especially all fertilizer used for organic crops. [5] [6]

Why Global Numbers are misleading—

Yes, globally livestock make up 14.5% of emissions, however there are huge regional differences which have to be accounted for. 80% of all livestock emissions in the world occur in developing countries, and in places like the U.S. in fact more emissions come from crop agriculture which accounts for 4.7% of emissions than livestock which only accounts for 3.9%. [7] Also, the US produces 18% of the world's beef, with 6% of the world's beef herd. The US has 9 million dairy cows while India has 300 million, yet the 2 countries produce the same amount of milk. Efficiency matters. [3]

But what about methane, yes, it does warm the Earth more than CO2 however the amount is obviously important, if we measure it with CO2 equivalency methane only accounts for 10% of (the effect of) greenhouse gases in the US [8], 2.7% out of (the total) 100% coming from animals.

Adding to this cows do not add more methane, grass takes up CO2 in the air trough photosynthesis, the cow eats the plant and it's C(carbon), and in the cow the carbon is turned into methane, which is Carbon and 4 mols of hydrogen, CH4, after release then in about 10 years it is broken down into water and CO2, carbon is again taken from the atmosphere by the plant, and the cycle continues. Also, this is nothing too new, before the Europeans came to the Americas bison and elk seem to have produced an amount of methane equal to 86% of that of present day farm animals' methane emissions. [9]

Something more important than meat—

Speaking of methane, guess what else emits a lot of methane, the organic matter decomposing in landfills, what's that decomposing, wasted food.

One third of all food in the world ends up wasted, the FAO says that if food wastage was a country it'd be the third largest in the world in terms of it's emissions [10]

82% of global (yes, here there are more factors involved in every area) food waste is non-animal foods [11], so another side effect of giving up animal agriculture would likely be more food waste. Food waste is in fact an actual big problem, and animals could be a part of that solution, because the bakery goods or vegetables that people don't want to eat could be fed to livestock, or, we ourselves could try to waste less food, instead of schools implementing "meatless mondays", "no-waste thursday" might be better.

And this is a real way of changing personal habits for the better, while also having the world improve. I believe this to be far more important as one should practice what they preach, and putting out shocking statistics may get the most funding and attention however you should if you really care about something research things a little before making them your identity (i.e. as in the case with documentaries that tell you becoming vegan is "doing more good than not driving for half a year" while ignoring the 75% of emissions caused by fossil fuels and complexity of the 3.9% livestock emissions in say what we used as an example, the U.S. [7]).

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