# 7–2 Bibliography v2 – Josh Ying

*Topic in mind: Meat & Environment*

## Research Bibliography

*Vergunst, F., & Savulescu, J. (2017, April 27). Five ways the meat on your plate is killing the planet. Facts and Arts. https://www.factsandarts.net/essays/five-ways-meat-your-plate-killing-planet*

**Question**:

- how does meat consumption negatively contribute to the environment?

**Quote**:

- Livestock farming has a vast environmental footprint. It contributes to land and water degradation, biodiversity loss, acid rain, coral reef degeneration and deforestation.
- Meat production is highly inefficient — this is particularly true when it comes to red meat. To produce one kilogram of beef requires 25 kilograms of grain — to feed the animal — and roughly 15,000 litres of water. Pork is a little less intensive and chicken less still.
- Feeding grain to livestock increases global demand and drives up grain prices, making it harder for the world's poor to feed themselves. Grain could instead be used to feed people, and water used to irrigate crops.
- Most meat, dairy and eggs are produced in ways that largely or completely ignore animal welfare — failing to provide sufficient space to move around, contact with other animals, and access to the outdoors.
- The majority of antibiotics we use are for livestock — up to 80% in the US. This contributes to the growing public health problem of antibiotic resistance

*Poore, J., & Nemecek, T. (2018). Reducing food's environmental impacts through producers and consumers. Science, 360(6392), 987–992. https://doi.org/10.1126/science.aaq0216*

**Question**:

- how much does meat consumption contribute to the climate change?

**Quote**:

- Food is produced and processed by millions of farmers and intermediaries globally, with substantial associated environmental costs.
- about 15% of all greenhouse gas emissions are created by the meat industry

*Ritchie, H. (2020, January 24). You want to reduce the carbon footprint of your food? Focus on what you eat, not whether your food is local. Our World in Data. https://ourworl*

*dindata.org/food-choice-vs-eating-local*

**Question**:

- which part of the supply chain contribute the most the greenhouse gas emissions for meat?
- what is the best way for us to reduce our carbon foorprint through diet?

**Quote**:

- GHG emissions from transportation make up a very small amount of the emissions from food and what you eat is far more important than where your food traveled from.
- For most foods — and particularly the largest emitters — most GHG emissions result from land use change, and from processes at the farm stage. Farm-stage emissions include processes such as the application of fertilizers; and enteric fermentation (the production of methane in the stomachs of cattle). Combined, land use and farm-stage emissions account for more than 80% of the footprint for most foods.

*Climate change: How cow burps and pink seaweed can affect the planet - CBBC Newsround. (2019, August 17). BBC.*

**Question**:

- How did animals themselves contribute to GHG

**Quote**:

- Cows have pretty complicated stomachs which are split into four parts. The microbes that live in the rumen, the first part, are the ones that cause the problems. When cows eat grass the microbes in the rumen break down and ferment it making methane gas as a by-product - This process is called 'enteric fermentation'. The cow then burps, or farts the methane gas out.

*Yusuf, R. O., Noor, Z. Z., Abba, A. H., Hassan, M. A. A., & Din, M. F. M. (2012). Methane emission by sectors: A comprehensive review of emission sources and mitigation methods. Renewable and Sustainable Energy Reviews, 16(7), 5059–5070. https://doi.org/10.1016/j.rser.2012.04.008*

**Question**

- how does meat consumption compared to other GHG contributors?

**Quotation**

- among human-related activities, enteric fermentation is the biggest contributor to methane emissions globally

## Media Materials

1. Burping Cow & Sheep

https://www.youtube.com/watch?v=tDjEqYR6CGE
https://www.youtube.com/watch?v=bNrFdrxlTOo
https://www.youtube.com/watch?v=3fHjmPQI8FU

2. & 3. Meathooked & End of Water (VICE on HBO: Season 4, Episode 5)

https://www.youtube.com/watch?v=QkPBam3qO34

- Ken Cook, President of the Environmental Working Group
  - the state of meat production today

    - Time stamp: 7:24 – 8:08
- Mike Callicarate, Cattle Rancher
    - The scale of land and water used by the giant meat producers
    - Time stamp: 12:02 – 12:43