Fertilizer / Haber-Bosch / ammonia / global agriculture

1. Erisman, J. W., Galloway, J., Seitzinger, S., Bleeker, A., & Kroeger, T. (2008). *How a century of ammonia synthesis changed the world*. *Nature Geoscience, 1*(10), 636-639. https://doi.org/10.1038/ngeo325
    - Explains the historic development of the Haber–Bosch process and its profound influence on agriculture (including nitrogen fixation from the atmosphere).
    - Reinforces that "discovery of ammonia fertilizer … had a profound impact".
2. Ritchie, H. (2022). *Fertilizers*. Our World in Data. https://ourworldindata.org/fertilizers
    - Provides data on synthetic fertilizer use, crop yields, land-use efficiency, and supports the claim that fertilizers reduce the needed land area for cultivation.
    - Points towards the estimate about "50% of the world's food production relies on … ammonia-based fertilizers".
3. Pellegrini, P., Fernández-Pena, J., & others. (2018). Crop intensification, land use, and on-farm energy: A global meta-analysis. *Global Change Biology, 24*(6), 2583-2594. https://doi.org/10.1111/gcb.14112
    - Shows how yield increases (driven in part by fertilizers) allowed global production to increase without proportional land expansion.
    - Aligns with the argument about "if crop yields had remained at their 1900 levels, … would have required nearly four times more cultivated land".
4. Menegat, S., et al. (2022). Greenhouse gas emissions from global production and use of synthetic nitrogen fertilizer. *Scientific Reports, 12*, 1485. https://doi.org/10.1038/s41598-022-18773-w
    - Provides quantitative data on the environmental side of synthetic nitrogen fertilizer production and use: e.g., GHG emissions, land/water impacts.
    - Supports the nuance in "the discovery … had a profound impact …" including unintended consequences.
5. Frontiers in Energy Research. (2021). Sustainable ammonia production processes: A review of technologies for producing ammonia with lower environmental impact. *Frontiers in Energy Research, 9*. https://doi.org/10.3389/fenrg.2021.580808

- Reviews emerging technologies for ammonia production (less fossil-fuel dependent) which can be used to support a “next steps” or “future challenge” segment.
- Useful if you want to talk about the “today … 180 million tonnes annually … 88% used for fertilizer production” and the sustainability implications.

Water-pollution / animal-carcass disposal / livestock & water quality

6. Kwon, M. J., et al. (2017). Impacts of leachates from livestock carcass burial and manure heaps on geochemical and microbiological properties of groundwater. *Science of the Total Environment, 598*, 678-689. https://doi.org/10.1016/j.scitotenv.2017.04.090
    - Investigates direct impacts of carcass-burial leachate on groundwater quality.
    - This supports the claim that “killing of and depositing sacrificed animals into water bodies … contribute to water pollution”.
7. Vithanage, M., et al. (2021). Animal carcass burial management: Implications for soil, water and air pollution. *Applied Biological Chemistry, 64*, 1-14. https://doi.org/10.1186/s13765-021-00652-z
    - Reviews environmental risks from carcass disposal (soil and water contamination).
    - Good backing up for the broader statement of sacrificial animal disposal impacting clean water supply.
8. Yuan, Q., et al. (2013). Potential water quality impacts originating from land burial of cattle carcasses. *Nebraska Environmental Publications* (2013-04 PDF).
    - Focuses on leachate and groundwater contamination from burial pits.
    - Offers empirical backing for “decomposing animal carcasses release large volumes of leachate into water”.
9. Burkholder, J. A., et al. (2006). Impacts of waste from concentrated animal feeding operations on water quality. *Environmental Health Perspectives, 114*(3), 409-416. https://doi.org/10.1289/ehp.8834

- Though not exactly “sacrificed animals into water bodies”, it addresses large-scale animal waste disposal and water-pollution.
- Useful to show the connection between animal waste, water pollution and human health.

10. Sabrang India. (2023, June 23). Environment is impacted by Bakri Eid but the outrage is selective. *SabrangIndia*. https://sabrangindia.in/environment-is-impacted-by-bakri-eid-but-is-the-outrage-selective/
    - This is a more journalistic source discussing mass animal sacrifice (Eid) and water pollution issues.
    - While not peer-reviewed, it helps support the cultural/spiritual practice angle mentioned (sacrificed animals & water bodies) and bolsters the narrative.