

Broken Agricultural System Promotes Climate Change Feedback Loop

Agriculture is a leading source of human-caused emissions that are warming our planet. Yet at the same time, climate change threatens the availability of food. Our nation's agricultural policies incentivize unsustainable practices, rather than target inefficiencies. The way we produce food needs to be entirely revamped, and we must invest in the necessary resources and infrastructure to protect our water from the dire effects of climate change.

Mitigating the worst effects of climate change also requires fundamental, systemic transformation. A first step would be rapidly decarbonizing our grid so that we can hit net-zero global emissions by 2050 (this requires a transition to 100 percent renewable energy), and we must make significant changes to our agricultural system.

Our Food System Drives Climate Chaos

Agricultural production contributes an estimated 15-25 percent of human-caused greenhouse gas emissions; livestock production contributes around 80 percent.¹ But corporate agriculture willfully ignores its inefficiencies, encouraging pesticide-dependent monocultures, propping up factory farms and sacrificing more acreage to unsustainable ethanol production.

Monocultures dominate global agriculture, including corn and soybeans grown in the American Midwest and other regions.² Monocultures are often produced with fossil fuels and can impair agricultural soils, reducing their health and ability to sequester carbon.³



Meanwhile, factory farms raise huge numbers of animals in confinement and produce enormous amounts of waste. A better approach would be to integrate livestock into cropping systems, giving livestock access to pasture and using their manure as fertilizer, thereby solving the waste issue while also eliminating the need for synthetic fertilizers.

Food transportation, processing and packaging also contribute to agriculture's footprint. Across the entire lifecycle of food production, agricultural releases are estimated at 19-29 percent of all human-caused climate emissions.⁴

Bad Policies Encourage Overproduction and Prop Up Factory Farms

Programs such as federal subsidized crop insurance incentivize the planting of commodities like corn and soybeans.⁵ Currently, the top four commodity crops — corn, soybeans, cotton and wheat — make up more than 70 percent of enrolled acres, while also qualifying for payouts in other programs.⁶

This system does a poor job of feeding people. Nearly 40 percent of U.S. corn goes into producing ethanol, and half of all North American crop calories are fed to livestock.⁷ Many foods that directly feed humans are ineligible under subsidized crop insurance and other federal safety net programs.⁸ This props up the factory farm system. Unsurprisingly, U.S. factory farms proliferated over the same time period that federal agricultural policy encouraged the overproduction of corn and soybeans.⁹ Our current farm safety net is a lose-lose situation even for many farmers of commodity crops, as it perpetuates depressed crop prices and low farm income.

Food System Solutions Are Climate Solutions

Our public dollars are investing in an old, polluting system that is incompatible with climate target goals. Instead of squeezing as much "productivity" out of the land as possible, we need to recognize the interplay between farmland and the surrounding ecosystem. This includes

integrating practices that maintain soil health and protect organisms vital to food production.¹⁰

We must put family farmers at the center, shortening the production chains between grower and consumer and investing in local markets.¹¹ Emerging research suggests that sustainable practices that focus on soil health can increase yields over the long run, potentially closing yield gaps between conventional and alternative systems.¹²

We could raise more food with fewer emissions if we instead devoted more fields to growing crops for direct human consumption.¹³ We must also change the way we raise livestock for food. And we can shift our diets to more appropriate levels of sustainably produced meat and dairy.

Conclusion

We must make enormous cuts in our greenhouse gas emissions in order to avoid the most severe impacts

to our most essential resources. The call for genuine, emissions-free renewable energy dates back nearly 50 years. We need a New Deal-scale green public works investment to drive the rapid transition to clean energy.

We also need to swiftly transform our food system into one that produces fewer emissions and is resilient to a changing climate. To achieve this, we must revamp our farm policies to put farmers and consumers at the center.

Recommendations:

- **Fix** the farm “safety net.”
- **Invest in research** for sustainable practices.
- **Increase grants** for conservation practices and close loopholes that enable factory farms to capture this funding.
- **Ban factory farms** and support a just transition.

Endnotes

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- 8 Rosa and Johnson (2019) at 9; Smith (2019) at 43 to 44.
- 9 Smith (2019) at 47 to 48 and 55.
- 10 Bélanger and Pilling (2019) at xxxvii and xxxviii.
- 11 *Ibid.* at 6 and 20.
- 12 Schrama, M. et al. “Crop yield gap and stability in organic and conventional farming systems.” *Agriculture, Ecosystems and Environment*. Vol. 256. March 15, 2018 at 123, 124 and 129; Ponisio, Lauren C. et al. “Diversification practices reduce organic to conventional yield gap.” *Proceedings of the Royal Society B*. Vol. 282, Iss. 1799. January 22, 2015 at 1, 2 and 5; U.S. Department of Agriculture. Natural Resources Conservation Service (NRCS). [Fact sheet]. “Cover Crops to Improve Soil in Prevented Planting Fields.” June 2013 at 1; Aktar, Md. Wasim. et al. “Impact of pesticides use in agriculture: Their benefits and hazards.” *Interdisciplinary Toxicology*. Vol. 2, Iss 1. 2009 at 1.
- 13 P. Pradhan et al. “Embodied crop calories in animal products.” *Environmental Research Letters*. Vol. 8. 2013 at 1 to 2 and 5 to 7.