

**BEEFING WITH THE INFLATION REDUCTION ACT:  
MISSED OPPORTUNITIES TO SOLVE AMERICAN CRISES  
BY ADDRESSING ANIMAL AGRICULTURE**

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ABSTRACT

*The food that a country produces and consumes has major consequences for the health and wellness of its environment and its people. As such, the Inflation Reduction Act of 2022 was remiss in failing to seriously address the impact of ruminant production and consumption on Americans in purporting to mitigate climate change, reduce healthcare costs, and stabilize the economy. This Note recommends ways the Act could have effectively executed its goals by addressing the problems ruminants cause.*

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\* J.D. Candidate, Rutgers Law School, May 2024. The author would like to thank his colleagues at *Rutgers University Law Review* for their time, diligence, and effort; his faculty advisor, Professor Emily Kline, for her insightful feedback; and his family for their unwavering support and encouragement.

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## I. THESIS AND INTRODUCTION

Considering its massive contribution to greenhouse gas emissions and climate change,<sup>1</sup> the impact of many of its products on human health,<sup>2</sup> and the opportunity that exists to capitalize and invest in alternatives,<sup>3</sup> the Inflation Reduction Act of 2022 (“IRA”) should have addressed and regulated animal agriculture more conscientiously.<sup>4</sup> Particularly, it should have focused more seriously on the keeping and production of ruminants,<sup>5</sup> and provided more specific and clear directions to the Secretary of Agriculture for reducing the impact of animal agriculture and investing in alternatives.<sup>6</sup> By failing to do so, the IRA

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1. See *Overview of Greenhouse Gases: Methane Emissions*, U.S. Env’t Prot. Agency (Oct. 10, 2023), <https://www.epa.gov/ghgemissions/overview-greenhouse-gases#methane>.

2. See, e.g., Philip J. Tusso et al., *Nutritional Update for Physicians: Plant-Based Diets*, 17 PERMANENTE J. 61, 61–64 (2013).

3. See, e.g., Daniela De Lorenzo, *Denmark Plans to Spend \$195 Million to Boost Plant-Based Foods. Can It Do So While Remaining a Top Pork Producer?*, FORBES (Nov. 22, 2021, 12:45 AM), <https://www.forbes.com/sites/danieladelorenzo/2021/11/22/denmark-plans-to-spend-195-million-to-boost-plant-based-foods-can-it-do-so-while-remaining-a-top-pork-producer/?sh=46f80ddb532c>.

4. See generally Inflation Reduction Act of 2022, Pub. L. No. 117–169, 136 Stat. 1818.

5. See *id.* § 21001.

6. This Note will not address issues that may arise under the nondelegation doctrine surrounding the failure of Congress to provide the Secretary of Agriculture with an “intelligible principle” to guide the carrying out of his duties stemming from the IRA. See, e.g., *J.W. Hampton, Jr. & Co. v. United States*, 276 U.S. 394, 407–09 (1928); see also *Article I, Section 1 Historical Background on Nondelegation Doctrine*, CONST. ANNOTATED,

missed significant opportunities to achieve its own purpose in reducing inflation and, importantly, building a stronger future for the American people.

This Note will evaluate the Inflation Reduction Act's efforts to reduce inflation and protect the United States' future by mitigating the effects of climate change, reducing healthcare costs, and encouraging economic growth in new industries through regulation of animal agriculture. After discussing and illuminating the IRA's few provisions that address animal agriculture, this Note will conduct a comparison with legislation of the states and international governments. Finally, this Note will make recommendations as to how the bill could have and should have addressed the problems it purports to act against.

## II. THE PURPOSE OF THE INFLATION REDUCTION ACT

At its foundation, the IRA is intended to generally benefit the American people in most major facets of their lives.<sup>7</sup> The IRA seeks to reduce inflation by addressing major costs and imminent problems that the American people are currently facing or will face in the near future.<sup>8</sup> It purports to “lower[] prescription drug costs, health care costs, and energy costs” all with the overarching aim of reducing inflation.<sup>9</sup> At the same time, and through its efforts to lower those aforementioned costs, it takes “aggressive action on tackling the climate crisis”<sup>10</sup> which has been and will continue to be destructive to the lives of millions.<sup>11</sup>

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[https://constitution.congress.gov/browse/essay/artI-S1-5-](https://constitution.congress.gov/browse/essay/artI-S1-5-2/ALDE_00000009#ALDF_00000068)

2/ALDE\_00000009#ALDF\_00000068 (last visited Feb. 10, 2024). While the provisions regarding enteric methane emissions within the IRA are excessively brief and arguably do not provide enough detail for the Secretary to work from, to argue that the provision is unconstitutional because it fails to provide an intelligible principle would be counterproductive. *See* Inflation Reduction Act of 2022 § 21001. Indeed, the provisions that exist, albeit short, are a step in the right direction with regard to reduction in enteric methane emissions, and I would not seek to have them repealed for constitutionality purposes. *See id.*

7. *See* Press Release, White House, Fact Sheet: The Inflation Reduction Act Supports Workers and Families (Aug. 19, 2022), <https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/19/fact-sheet-the-inflation-reduction-act-supports-workers-and-families/>.

8. *See id.*

9. *Id.*

10. *Id.*

11. Rebecca Hersher, *Earth is Barreling Toward 1.5 Degrees Celsius of Warming, Scientists Warn*, NPR (May 26, 2021, 8:01 PM), <https://www.npr.org/2021/05/26/1000465487/earth-is-barreling-toward-1-5-degrees-celsius-of-warming-scientists-warn>.

Ultimately, the IRA not only seeks to ensure the financial stability of the American people, but also to protect their very lives, and the lives of the people who will inherit this world from us.<sup>12</sup> But despite that effort, the IRA fails to address the general direct and indirect harms of animal agriculture on the health and wellbeing of the American people.<sup>13</sup> As such, it misses opportunities to combat more effectively the problems it set out to solve.

### III. THE PROBLEMS

It is clear that there is no silver bullet for the problems that the IRA seeks to solve, but they all bear strong connections to animal agriculture. In barely touching upon the issue, the IRA grants vast deference to the Secretary of Agriculture with regard to reducing emissions within the scope of the Secretary's authority.<sup>14</sup>

Animal agriculture—particularly enteric methane emissions from ruminants—is one of the most detrimental sources of greenhouse gas emissions driving climate change.<sup>15</sup> The clearest way to reduce enteric methane emissions is to reduce the number of ruminants on the planet.<sup>16</sup> But, importantly, reducing the number of ruminants would also presumably entail a reduction of the amount of meat and animal product consumption that is taking place.<sup>17</sup> As such, the impact of processed animal products on the human body could be mitigated.

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12. See Press Release, White House, *supra* note 7.

13. See Tusso et al., *supra* note 2, at 61–64.

14. See Inflation Reduction Act of 2022, Pub. L. No. 117–169, § 21001(a)(1)(B)(ii), 136 Stat. 1818, 2016.

15. U.S. ENV'T PROT. AGENCY, *supra* note 1; see, e.g., Karlie Conzachi, *It May Be Uncomfortable, But We Need to Talk About It: The Animal Agriculture Industry and Zero Waste*, UNIV. COLO. BOULDER ENV'T CTR. (Mar. 15, 2022), <https://www.colorado.edu/center/2022/03/15/it-may-be-uncomfortable-we-need-talk-about-it-animal-agriculture-industry-and-zero-waste>; *Animal Agriculture: How Bad Is It for Climate Change and the Environment?*, FACTORY FARMING AWARENESS COAL. (Dec. 7, 2021), <https://ffacoalition.org/articles/animal-agriculture-environment/>.

16. This seems to be intuitive—the less ruminants that exist, the less methane they will emit.

17. Additional measures, such as taxes, would likely be required to see a true reduction in the amount of meat eaten by Americans. For a discussion of the effectiveness of taxes and other tactics on changes in consumer behavior with regard to carbon emissions, see generally Michael P. Vandenbergh et al., *Individual Carbon Emissions: The Low Hanging Fruit*, 55 UCLA L. REV. 1701 (2008).

### A. Climate Change

Climate change is a driver of inflation.<sup>18</sup> As the COVID-19 pandemic demonstrated, supply chain disruptions result in increased costs of business, which are in-turn shifted onto the consumer.<sup>19</sup> Scientists warn that in order to avoid the catastrophic effects of climate change—effects that will certainly prove disastrous for American infrastructure, economics, and human life—the annual rise in global temperature must stay below 1.5 degrees Celsius.<sup>20</sup> Given the rate at which the planet continues to warm,<sup>21</sup> Congress’s failure to properly address all forms of emissions—and for the purposes of this Note, emissions from animal agriculture—was negligent.

#### 1. Enteric Methane Emissions

If the legislators who passed the IRA were serious about its purposes, it would have been prudent to take all forms of agricultural greenhouse gas emissions seriously, but particularly enteric methane emissions.

Methane is the second largest contributor to greenhouse gas emissions behind carbon dioxide, amounting to about “12% of all U.S. greenhouse gas emissions from human activities.”<sup>22</sup> But despite that seemingly low percentage, the gas is deceptively sinister.<sup>23</sup> Methane is known as a short-lived climate pollutant (“SLCP”).<sup>24</sup> Though it remains in the atmosphere for relatively shorter periods of time before decaying (methane’s atmospheric lifespan is about twenty years, in comparison to carbon dioxide’s (“CO<sub>2</sub>”) approximately 100-year atmospheric lifespan),<sup>25</sup>

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18. Hope King, *Climate Change Is a Secret Driver of Inflation*, AXIOS (Aug. 18, 2022), <https://www.axios.com/2022/08/18/inflation-climate-change-economy-extreme-weather>.

“Heavy rainfall, flooding, heat waves and droughts erode agriculture, infrastructure and workers’ ability to stay on the job—all of which lead to supply-chain breakdowns and worker shortages.” *Id.*; see also Robinson Meyer, *The Rise of Greenflation*, ATL. (Feb. 2, 2022), <https://www.theatlantic.com/science/archive/2022/02/greenflation-prices-inflation-climate-change-coffee-lumber/621456/> (discussing the ways climate change and the unprecedented weather changes accompanying it have resulted in raised prices for key commodities).

19. King, *supra* note 18; see also Meyer, *supra* note 18.

20. Hersher, *supra* note 11.

21. *Id.*

22. U.S. ENV’T PROT. AGENCY, *supra* note 1.

23. See Gayathri Vaidyanathan, *How Bad of a Greenhouse Gas Is Methane?*, SCI. AM. (Dec. 15, 2022), <https://www.scientificamerican.com/article/how-bad-of-a-greenhouse-gas-is-methane/>.

24. Hyunok Lee, *State Regulation on Livestock Methane and Challenges Faced by the California Dairy Industry*, 20 U. CAL. GIANNINI FOUND. OF AGRIC. ECON., Nov.–Dec. 2016, at 1, 1.

25. *Id.*

methane heats up the planet at a rate about eighty-six times higher than CO<sub>2</sub>.<sup>26</sup> As such, methane emissions result in a much warmer planet than CO<sub>2</sub> does, and at a much faster rate.<sup>27</sup>

Cows alone are estimated to be responsible for about forty percent of methane emissions.<sup>28</sup> They, like other ruminants such as sheep, produce the gas in their stomachs and then belch it into the atmosphere.<sup>29</sup> This process is called enteric fermentation.<sup>30</sup> During enteric fermentation food and fibers are broken down by microorganisms, yielding methane.<sup>31</sup>

The United States is the world's leading producer of beef and is projected to keep that distinction in the future.<sup>32</sup> In 2021, it produced 12,730 metric tons of beef and veal.<sup>33</sup> And eighty-five percent of that beef is produced by only four companies.<sup>34</sup>

Despite its significant impact on the environment, the IRA only briefly addresses enteric methane emissions.<sup>35</sup> This is in contrast to subcategories of other forms of greenhouse gas emissions.<sup>36</sup> Indeed, vehicles (which release CO<sub>2</sub>) are mentioned disproportionately compared to ruminants.<sup>37</sup> The word “vehicle” or “vehicles” appears 232 times in the IRA,<sup>38</sup> whereas “ruminant” or “ruminants” appears only once.<sup>39</sup> The same goes for the word “enteric” and even the word “animals.”<sup>40</sup> Fermentation

26. Vaidyanathan, *supra* note 23.

27. *Id.*

28. Ayeen Bior & Ashley Brown, *New Zealand Announces World-First Plan to Tax Cow and Sheep Burps*, NPR (June 9, 2022, 5:38 PM), <https://www.npr.org/2022/06/09/1104014587/new-zealand-announces-world-first-plan-to-tax-cow-and-sheep-burps>.

29. Lee, *supra* note 24, at 2.

30. *Id.*

31. *Livestock and Enteric Methane*, FOOD & AGRIC. ORG. OF THE U.N., <https://www.fao.org/in-action/enteric-methane/background/> (last visited Mar. 16, 2024).

32. Mahsa Shahbandeh, *Leading Beef and Veal Producing Countries Worldwide in 2021 and 2022*, STATISTA (Apr. 2023), <https://www.statista.com/statistics/263990/leading-beef-producers-around-the-world-since-2007/>; see also *Cattle and Beef Market Outlook*, U.S. DEPT. OF AGRIC., <https://www.ers.usda.gov/topics/animal-products/cattle-beef/market-outlook/> (Feb. 14, 2024).

33. Shahbandeh, *supra* note 32.

34. Tom Polansek, *Explainer: How Four Big Companies Control the U.S. Beef Industry*, REUTERS (June 17, 2021, 1:12 PM), <https://www.reuters.com/business/how-four-big-companies-control-us-beef-industry-2021-06-17/>.

35. See Inflation Reduction Act of 2022, Pub. L. No. 117–169, § 21001, 136 Stat. 1818, 2015–18.

36. See generally *id.*

37. See generally *id.*

38. See generally *id.*

39. *Id.* at 2016.

40. *Id.* at 2016 (enteric), 2031 (animals).

is mentioned exactly zero times in the bill,<sup>41</sup> despite the aforementioned impact of enteric fermentation on the health of the environment and atmosphere.<sup>42</sup> Further, “agriculture” is only mentioned on twelve occasions, not including mentions of the Department of Agriculture itself, which occurs nine times throughout the Act.<sup>43</sup> This shows that the impact of animal agriculture on the health of the environment and the American people was not in the forefront of the drafters’ minds when they wrote and passed the IRA.

The relevant portion of the IRA with regard to enteric methane emissions—Sec. 21001(a)(1)(B)(ii)(II-III)—states that the Secretary of Agriculture is to use allocated funds, as well as the “facilities and authorities” of the Commodity Credit Corporation<sup>44</sup> to carry out the environmental quality incentives program<sup>45</sup> under provisions in the Food Security Act of 1985 “section 1240H(c)(2) of the Food Security Act of 1985 (16 U.S.C. 3839aa–8(c)(2)) shall be applied . . . by substituting ‘\$50,000,000’ for ‘\$25,000,000’; and with the Secretary prioritizing proposals that utilize diet and feed management to reduce enteric methane emissions from ruminants.”<sup>46</sup>

Section 21001(a)(1)(iii) further declares that those funds “shall be available for 1 or more agricultural conservation practices or enhancements that the Secretary determines directly . . . reduce, capture, avoid, or sequester carbon dioxide, methane, or nitrous oxide emissions, associated with agricultural production” among other things.<sup>47</sup>

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41. *See id.*

42. *See* U.S. ENV’T. PROT. AGENCY, *supra* note 1; Vaidyanathan, *supra* note 23.

43. *See* Inflation Reduction Act of 2022 § 21001, 136 Stat. at 1922, 1986, 1995, 2018, 2022, 2023, 2027.

44. The Commodity Credit Corporation (“CCC”), originally created in 1933, is a corporation owned by the United States Government within the Department of Agriculture. *Commodity Credit Corporation*, U.S. DEP’T OF AGRIC., <https://www.usda.gov/ccc> (last visited Mar. 16, 2024). The Secretary of Agriculture supervises and directs the CCC’s Board of Directors, and the programs initiated by the CCC are to be approved by the Secretary. *Id.* Essentially, the IRA delegates decision-making power to the CCC with regard to enteric methane emissions. *See id.*

45. The Environmental Quality Incentives Program was implemented by the Department of Agriculture’s Natural Resources Conservation Service to help “farmers, ranchers and forest landowners integrate conservation into working lands.” *Environmental Quality Incentives Program*, DEP’T OF AGRIC., NAT. RES. CONSERVATION SERV., <https://www.nrcs.usda.gov/programs-initiatives/eqip-environmental-quality-incentives> (last visited Mar. 16, 2024).

46. Inflation Reduction Act of 2022 § 21001, 136 Stat. at 2016.

47. *Id.*

But nowhere in the Food Security Act of 1985,<sup>48</sup> including 16 U.S.C. 3839aa–8(c)(2), is methane mentioned, let alone enteric methane emissions.<sup>49</sup> This is not a surprise, considering the date of its enactment.

### B. *Healthcare Costs and Animal Consumption*

The reduction of enteric methane emissions, at least globally, could coincide with a general a reduction of the amount of animal meat and products consumed by humans.<sup>50</sup> This would be an indirect but important and beneficial result of regulations that would reduce such emissions, especially with regard to achieving the purpose of the IRA.<sup>51</sup> Indeed, taxes on emissions could result in price increases, which may drive down consumption (there would also need to be a tax on imported meat, so as not to defeat the purpose).<sup>52</sup> But studies show that taxes on red and processed meat could prove to reduce healthcare costs.<sup>53</sup> Further, investments in alternatives to animal meat and dairy—like investments in alternatives to carbon-powered vehicles—would give consumers other options that are healthier not only for the environment, but their

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48. See generally Food Security Act of 1985, H.R. 2100, 99th Cong. (1985). The IRA stipulates that the Food Security Act will be implemented with the Secretary of Agriculture focusing on plans that reduce enteric methane emissions. See Inflation Reduction Act of 2022 § 21001. While the Food Security Act does include some provisions regarding the protection and improvement of air quality, methane is not of particular concern in the legislation. See generally LEWRENE K. GLASER, U.S. DEP'T OF AGRIC., PROVISIONS OF THE FOOD SECURITY ACT OF 1985 (1985). In fact, methane is not mentioned at all—and neither is CO2 for that matter. See H.R. 2100. The Food Security Act provides that:

The Secretary shall provide payments under this subsection to producers to implement practices to address air quality concerns from agricultural operations . . . . The funds shall be made available on the basis of air quality concerns in a State and shall be used to provide payments to producers that are cost effective and reflect innovative technologies.

16 U.S.C. § 3839aa–8(b)(1).

49. See generally H.R. 2100.

50. Cf. Vandenbergh et al., *supra* note 17, at 1758.

51. See Press Release, White House, *supra* note 7.

52. Cf. Erik Haites et al., *Experience with Carbon Taxes and Greenhouse Gas Emissions Trading Systems*, 29 DUKE ENV'T L. & POL'Y F. 109, 148 (2018). The article finds that carbon taxes have a limited impact on emissions in the short-term, but that ultimately if a carbon tax is sufficiently high for a sustained period of time, reductions in emissions result from a reduction in consumption. See *id.* I posit that an analogous impact would be had where products that result in enteric methane emissions are taxed. Cf. *id.*

53. See Marco Springmann et al., *Health-Motivated Taxes on Red and Processed Meat: A Modelling Study on Optimal Tax Levels and Associated Health Impacts*, PLOS ONE, Nov. 6, 2018, at 1, 6.



bodies.<sup>54</sup> Less animal production also means more effective use of land.<sup>55</sup> Indeed, animal production uses about eighty-three percent of the world's farmland but only accounts for about eighteen percent of its calories.<sup>56</sup> In turn, a decrease in enteric methane emissions will come with a decrease in Americans' healthcare costs.<sup>57</sup>

Heart disease is the leading cause of death in the United States.<sup>58</sup> At this point, it is widely accepted in the medical community that meat—particularly red and processed meat—is strongly linked to significant increases in the risk of heart disease.<sup>59</sup> Further, dairy consumption has been linked to various forms of cancer.<sup>60</sup> In fact, one study published by the Public Library of Science's scientific journal suggests that, globally, the health-related costs directly attributable to the consumption of red and processed meat in 2020 totaled approximately \$285 billion.<sup>61</sup> That is equal to about 0.3% of the world's gross domestic product.<sup>62</sup> Further, it suggests that 4.4% of all deaths may be caused by red or processed meat.<sup>63</sup>

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54. See e.g., Dana Hunnes, *The Case for Plant Based*, UCLA SUSTAINABILITY, <https://www.sustain.ucla.edu/food-systems/the-case-for-plant-based/> (last visited Mar. 16, 2024); Mika Jalava et al., *Diet Change—A Solution to Reduce Water Use?*, 9 ENV'T RSCH. LETTERS, July 2014, at 1, 6; Battaglia Richi et al., *Health Risks Associated with Meat Consumption: A Review of Epidemiological Studies*, 85 INT. J. FOR VITAMIN & NUTRITION RSCH. 70, 75 (2015) ("Vegetarians have a lower risk of dying from cardiovascular disease or from certain types of cancer compared to meat-eating individuals.").

55. See Joseph Poore & Thomas Nemecek, *Reducing Food's Environmental Impact Through Producers and Consumers*, 360 SCIENCE 987, 990 (2018).

56. *Id.*

57. See *infra* note 59 and accompanying citations. If fewer people are eating less meat due to increased costs as a result of regulations aimed at decreasing enteric methane emissions, then one can speculate that people will be healthier and spend less money on reactionary healthcare. See *infra* note 59 and accompanying citations; see also *Leading Causes of Death*, CTRS. FOR DISEASE CONTROL & PREVENTION (Jan. 17, 2024), <https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm>.

58. *Leading Causes of Death*, *supra* note 57.

59. *Eating Red Meat Daily Triples Heart Disease-Related Chemical*, NAT'L INSTS. OF HEALTH (Jan. 8, 2019) (citing Zeneng Wang et al., *Impact of Chronic Dietary Red Meat, White Meat, or Non-Meat Protein on Trimethylamine N-oxide Metabolism and Renal Excretion in Healthy Men and Women*, 14 EUR. HEART J., 583, 584–91 (2019)), <https://www.nih.gov/news-events/nih-research-matters/eating-red-meat-daily-triples-heart-disease-related-chemical>; Richi et al., *supra* note 54, at 72–75.

60. *Health Concerns About Dairy*, PHYSICIANS COMM. FOR RESPONSIBLE MED., <https://www.pcrm.org/good-nutrition/nutrition-information/health-concerns-about-dairy> (last visited Mar. 16, 2024).

61. Springmann et al., *supra* note 53, at 6.

62. *Id.*

63. *Id.*

The IRA also focuses significantly on the impact of greenhouse gas emissions on the health of people in low-income communities, and rightfully so.<sup>64</sup> It aims to reduce healthcare costs by, for example, expanding eligibility for low-income subsidies under the Medicare program and implementing caps on cost-sharing payments under prescription drug plans.<sup>65</sup> It also suggests reducing the “diesel emissions resulting from goods movement facilities, and vehicles servicing goods movement facilities, in low-income and disadvantaged communities to address the health impacts of such emissions on such communities.”<sup>66</sup> Glaringly, though, the IRA ignores the benefits of preventative action with regard to healthcare—namely diet. The same low-income communities suffering disproportionately from emissions in their areas are also oftentimes living in food deserts<sup>67</sup>—areas where people have limited access to a variety of healthy and affordable food.<sup>68</sup> This fact is inextricably tied to animal agriculture and the food products it produces.

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64. See, e.g., Inflation Reduction Act of 2022, Pub. L. No. 117–169, § 30002, 136 Stat. 1818, 2027–28; § 50121, 136 Stat. at 2033–36.

65. *Id.* § 11202, 136 Stat. at 1893–96.

66. *Id.* § 60104, 136 Stat. at 2067; see also Hazar Kilani, “Asthma Alley”: Why Minorities Bear Burden of Pollution Inequity Caused by White People, *GUARDIAN* (Apr. 4, 2019), <https://www.theguardian.com/us-news/2019/apr/04/new-york-south-bronx-minorities-pollution-inequity>. In parts of the South Bronx in New York City, for example, the vast majority of the population is made up of people of color. *Id.* These residents have markedly higher rates of asthma partially resulting from the constant inhalation of emissions from hundreds of diesel trucks going in and out of nearby warehouses to pick up and drop off cargo before getting back onto one of the four nearby highways, on which trucks pass by all day. See *id.* Asthma hospitalizations for these communities is five times the national average. *Id.*

67. See Michele Ver Ploeg, *Access to Affordable, Nutritious Food Is Limited in “Food Deserts”*, U.S. DEP’T OF AGRIC. (Mar. 10, 2010), <https://www.ers.usda.gov/amber-waves/2010/march/access-to-affordable-nutritious-food-is-limited-in-food-deserts/>; Brian Elbel et al., *Assessment of a Government-Subsidized Supermarket in a High-Need Area on Household Food Availability and Children’s Dietary Intakes*, 18 *PUB. HEALTH NUTRITION* 2881, 2281–82 (2015). Studies on food deserts have focused on lack of access to healthier foods such as vegetables. Ploeg, *supra*. But in food deserts less healthy foods are also more accessible and less expensive. *Id.* But see Jessie Handbury et al., *Is the Focus on Food Deserts Fruitless? Retail Access and Food Purchases Across the Socioeconomic Spectrum* 41–42 (Nat’l Bureau of Econ. Rsch., Working Paper No. 21126, 2015). The study found that even when controlling for access, there are still disparities in healthy food consumption between people of high- and low-socioeconomic status. *Id.* In other words, the study found that adding healthy food stores to food deserts did not significantly impact the eating habits of households, particularly among low-income and less educated households. *Id.*; see also Greg Johnson, *Eliminating Food Deserts May Not Lead to Healthy Eating*, *PENN TODAY* (June 11, 2015), <https://penntoday.upenn.edu/2015-06-11/research/eliminating-food-deserts-may-not-lead-healthy-eating>.

68. PAULA DUTKO ET AL., U.S. DEP’T OF AGRIC., *CHARACTERISTICS & INFLUENTIAL FACTORS OF FOOD DESERTS* 1 (2012).

## IV. ADDRESSING THE PROBLEMS

This Part will discuss the ways in which various governments and organizations, domestic and international, have worked to address the same issues the IRA purports to solve. Internationally, governments have taken arguably extreme actions throughout history to implement necessary dietary changes in its citizens for the sake of health. For example, in the early decades of the twentieth century, iodized salt became available in the United States to combat goiter.<sup>69</sup> Goiter is a health condition resulting from an iodine deficiency which became endemic in the United States in areas isolated from coastal regions where the chemical element was scarce.<sup>70</sup> While there is no government mandate of iodine fortification in the United States, well over 100 countries, including Canada, have adopted iodization mandates in all food-grade salt.<sup>71</sup> In a similar way, albeit less obvious, animal consumption can be viewed as a public health crisis solvable by large-scale dietary changes like those used to address goiter.

And regulation imposing a mandated shift toward reducing ruminant production, for example, would on first glance seem to triply benefit the American people in that (and with regard to the purpose of the IRA) it would cut emissions<sup>72</sup> that contribute to climate change, indirectly reduce Americans' health care costs by proactively shifting peoples' diets,<sup>73</sup> and, in turn, create manufacturing and other jobs in new markets.<sup>74</sup>

Indeed, the IRA does not shy away from the clear benefits that investments in electric vehicles will have on the economy.<sup>75</sup> So, in the

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69. Angela M. Leung et al., *History of U.S. Iodine Fortification and Supplementation*, 4 NUTRIENTS 1740, 1742–43 (2012); see Malcolm Gladwell, *Way to Go, Ohio*, PUSHKIN: REVISIONIST HIST. (June 2022), <https://www.pushkin.fm/podcasts/revisionist-history/way-to-go-ohio> (discussing goiter and iodine fortification in the United States). In the context of the COVID-19 pandemic, Gladwell posits that a similar tactic could be used by the United States government, in partnership with companies and organizations, to ensure the populace is effectively vaccinated against the disease. *Id.* In the same vein, and in probably a less extreme way, it is in the national interest to fortify the American diet with healthier foods.

70. Leung et al., *supra* note 69, at 1742.

71. *Id.* at 1742–43.

72. See *supra* note 53.

73. See Springmann et al., *supra* note 53, at 6.

74. See *Nine Million Jobs from Climate Action: The Inflation Reduction Act*, BLUEGREEN ALL., <https://www.bluegreenalliance.org/site/9-million-good-jobs-from-climate-action-the-inflation-reduction-act/> (last visited Mar. 16, 2024).

75. See, e.g., Inflation Reduction Act of 2022, Pub. L. No. 117–169, § 13401, 136 Stat. 1818, 1954–63. This is the first section of “Part 4—Clean Vehicles,” which is about fifteen pages long. *Id.*

same way that a shift toward the use of electric vehicles will presumably create jobs, a shift in the American production of animals<sup>76</sup> and, in turn, a shift in the American diet can also create jobs.<sup>77</sup> This is especially true given the population's increased interest with regard to dietary changes that involve shifting toward plant-based alternatives.<sup>78</sup> But to what extent have groups successfully attacked the problems from these angles with regard to animal agriculture?

#### A. California

California is widely known for its efforts to address climate change and has been a leader in many environmental initiatives relative to the other states.<sup>79</sup> As such, it is worth discussing efforts the state has made to cut emissions from animal agriculture,<sup>80</sup> and the extent to which the

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76. The Biden Administration seems to understand the significance of enteric methane emissions to an extent. In November of 2021, the White House released a plan to reduce methane emissions in the United States by thirty percent below 2020 levels by 2030. WHITE HOUSE OFF. OF DOMESTIC CLIMATE POL'Y, U.S. METHANE EMISSIONS REDUCTION ACTION PLAN 1 (2021). Despite acknowledging the level of emissions stemming from enteric methane from animal agriculture, the White House's plan actually mentions enteric fermentation only three times. *See id.* at 11. While the plan is a good sign of interest by the government, like the IRA, it does not address the impact of enteric methane emissions sufficiently.

77. *See Nine Million Jobs from Climate Action: The Inflation Reduction Act*, *supra* note 74. Building and maintaining the infrastructure and productivity required to transform the automotive industry into an industry that is environmentally sustainable will entail the creation of jobs. *Id.*; *see also* Press Release, White House, *supra* note 7. As such, transforming the American diet so as to not only fight against climate change but to make Americans healthier could also foreseeably result in job creation. *Cf. Nine Million Jobs from Climate Action: The Inflation Reduction Act*, *supra* note 74.

78. *See* Janet Forgive, *The Growing Acceptance of Veganism*, FORBES (Nov. 2, 2018), <https://www.forbes.com/sites/janetforgive/2018/11/02/picturing-a-kindler-gentler-world-vegan-month/?sh=67a5c93e2f2b>. Indeed, the number of U.S. consumers who identify as vegan—not just people interested in eating more plants—skyrocketed in the past eight years, increasing at least 600 percent between 2014 and 2017. *Id.* Further, some estimate that the plant-based foods market could make up more than seven percent of the global protein market by 2030, amounting to over \$160 billion. *Plant-based Foods Market to Hit \$162 Billion in Next Decade, Projects Bloomberg Intelligence*, BLOOMBERG (Aug. 11, 2021), <https://www.bloomberg.com/company/press/plant-based-foods-market-to-hit-162-billion-in-next-decade-projects-bloomberg-intelligence/>.

79. *See, e.g., California Leads Fight to Curb Climate Change*, ENV'T DEF. FUND, <http://www.fightglobalwarming.com/climate/california-leads-fight-curb-climate-change> (last visited Mar. 16, 2024).

80. While not exactly on-point with regard to ruminants particularly, in 2018 California imposed regulations establishing new minimum space and shelter requirements on farmers with regard to keeping and selling certain animals in the state with the hope of impacting in-state and out-of-state animal agriculture practices. *See* Prevention of Cruelty to Farm Animals Act, 2018 Cal. Legis. Serv. Proposition 12 (West) (codified as amended at CAL. HEALTH & SAFETY CODE §§ 25990–25993). After being challenged under the Commerce

IRA could have used it as a model. In 2016, California's governor signed into law Senate Bill 1383 (the "Bill") in an effort to implement policies that would allow the state to achieve its goals of reducing greenhouse gas emissions from its dairy industry.<sup>81</sup> The Bill, which went into effect on January 1, 2022, set a target of reducing methane emissions from the California livestock industry by forty percent by 2030.<sup>82</sup>

Despite its efforts to reduce emissions from the industry generally, the Bill—like the IRA—neglects to regulate enteric fermentation, shifting the onus onto the agencies executing the Bill's provisions.<sup>83</sup> This is apparently so in part because, although emissions resulting from enteric fermentation can be reduced by changing animal diets, there is arguably a significant amount of uncertainty surrounding the long-term consequences of such changes.<sup>84</sup> Instead of a mass regulation, the state is supporting research into the particular issue of enteric fermentation and is exploring incentive-based options.<sup>85</sup>

In 2017, the year after the Bill was made law, the California Air Resource Board ("CARB") adopted a plan outlining how it intended to implement the Bill's goals.<sup>86</sup> The plan focused in large part on issues surrounding emissions from dairy manure.<sup>87</sup> It suggested "scrape" methods, which move manure from barns into a holding pit where solids and liquids are separated.<sup>88</sup> Farmers then spread the solids on fields as a nutrient supplement, which apparently results in significantly less emissions than other methods of manure storage, like lagoon pits.<sup>89</sup> The

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Clause in 2021, the Ninth Circuit held that Proposition 12 is not unconstitutional. *See Nat'l Pork Producers Council v. Ross*, 6 F.4th 1021, 1029 (9th Cir. 2021), *aff'd*, 598 U.S. 356 (2023). But of course, the Commerce Clause wouldn't be an issue if Congress itself, rather than California, were the one legislating this. *See* U.S. CONST. art. I, § 8, cl. 3. Similar national requirements would indirectly decrease emissions by forcing producers to give animals more room, thereby potentially producing less animals, or at least healthier ones, and in a more humane way.

81. *See* Short-lived Climate Pollutants, S.B. 1383, 2016 Leg., 2015–2016 Reg. Sess. (Cal. 2022), [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201520160](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160).

82. *Id.* This was an act to add certain sections and a chapter to California's Health and Safety Code. *Id.*

83. *See id.* § 4(f), at 5–6.

84. *See supra* note 24, at 2; *see* CAL. HEALTH & SAFETY CODE § 39730.7(f) (West 2018).

85. CAL. ENV'T PROT. AGENCY AIR RES. BD., SHORT-LIVED CLIMATE POLLUTANT REDUCTION STRATEGY 8 (2017), [https://ww2.arb.ca.gov/sites/default/files/2020-07/final\\_SLCP\\_strategy.pdf](https://ww2.arb.ca.gov/sites/default/files/2020-07/final_SLCP_strategy.pdf).

86. *See id.*

87. *See id.* at 61–82.

88. Lauren Neuhaus, *Recommendations for Reducing Methane Emissions from Agricultural Sources in the United States*, 43 ENVIRONS ENV'T L. & POL'Y J. 207, 212 (2020).

89. *See id.*

seeming issue with this method is its glaring disregard for reducing animal production generally—thereby not positively impacting animal production’s impact on human health.<sup>90</sup>

Another strategy addressed in that vein is switching to pasture-based dairy production.<sup>91</sup> In the context of a pasture, manure decomposes aerobically and thereby results in a vanishingly small amount of methane emissions.<sup>92</sup> But such pasture systems require the use of even more irrigated land, supplemental feed, and infrastructure that reduces the impact of heat exposure on animals, while also making it harder for farmers to use manure as a resource.<sup>93</sup> Further, pasture systems generally result in decreased milk production, meaning more cows would be needed to produce the same volume of milk.<sup>94</sup> So, unless regulations were implemented to limit the milk a farm can produce—which would no doubt be controversial—this “solution” may have no discernable positive impact on environmental issues.<sup>95</sup>

#### B. United Nations

The United Nations’ (“U.N.”) Climate and Clean Air Coalition (“CCAC”) is seeking to reduce SLCPs generally on an international scale, and in doing so has addressed the issue of enteric fermentation through its Agricultural Initiative.<sup>96</sup>

Solutions proposed by the CCAC with regard to enteric fermentation include optimized feed,<sup>97</sup> balanced feed rations, a focus on the health of the animals in question, changes in the methods used for breeding, better management of grazing and grasslands used for grazing, better feed quality for the animals, and higher quality crop residues to be used as

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90. *See id.*

91. CAL. ENV’T PROT. AGENCY AIR RES. BD., *supra* note 85, at 65.

92. *Id.*

93. Neuhaus, *supra* note 88, at 213.

94. *Id.*; CAL. ENV’T PROT. AGENCY AIR RES. BD., *supra* note 85, at 65–66.

95. *See* Neuhaus, *supra* note 88, at 213.

96. *Agriculture Hub: Addressing Major Sources of Methane and Black Carbon While Improving Productivity*, CLIMATE & CLEAN AIR COAL., <https://www.ccacoalition.org/hubs/agriculture-hub> (last visited Jan. 24, 2024).

97. For a discussion of the potential impact of dietary changes on the emissions of enteric methane, and ways to mitigate such emissions using feed, see generally Najmul Haque, *Dietary Manipulation: A Sustainable Way to Mitigate Methane Emissions from Ruminants*, 60 J. OF ANIMAL SCI. & TECH., 2018, at 1. According to Dr. Haque, “[d]ietary modification is directly linked to changes in . . . fermentation pattern and types of end products.” *Id.* at 1. “Studies showed that changing fermentation pattern is one of the most effective ways of methane abatement.” *Id.* But such changes apparently actually also result in increased productivity, which may be counterproductive in the effort to ultimately shift society away from dependence on ruminant-based products and toward plant-based food systems. *See id.*

“fodder” in “mixed systems.”<sup>98</sup> But, like California, the U.N. also recognizes a need for more precise data regarding methane emissions as it relates to targeted efforts for reduction.<sup>99</sup> Late in 2022, the U.N. announced the Methane Alert and Response System (“MARS”)—a satellite-based system that will be used to track trends in methane emissions over time and corroborate emissions reported by companies, presumably for accountability purposes.<sup>100</sup> The goal is to get policy-relevant data regarding these emissions to the right people to mitigate climate change.<sup>101</sup>

### C. Denmark

Denmark understands the links between animal agriculture and the health of its population.<sup>102</sup> In 2021, in an effort to reduce emissions stemming from Denmark’s food systems, the country’s government approved a climate agreement that involved a massive investment into plant-based research and development.<sup>103</sup>

Included in the legislation is an annual fund of \$11.7 million until 2030 that will support the country’s transition to plant-based foods.<sup>104</sup> The climate plan allocates funding to research facilities and educational institutions to develop alternatives to animal-based foods using plants.<sup>105</sup> Part of this research will involve efforts to convince people to actually buy these products.<sup>106</sup> In that vein, Denmark’s Ministry of Environment also released new dietary guidelines for its citizens which seek to encourage a shift to a more plant-based diet.<sup>107</sup> Notably, the dietary guidelines

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98. *Enteric Fermentation*, CLIMATE & CLEAN AIR COAL., <https://www.ccacoalition.org/projects/enteric-fermentation> (last visited Mar. 16, 2024).

99. See Press Release, United Nations Environment Programme, U.N. Announces High-Tech, Satellite-Based Global Methane Detection System (Nov. 11, 2022), <https://www.unep.org/news-and-stories/press-release/un-announces-high-tech-satellite-based-global-methane-detection>.

100. *Id.*

101. *Id.*

102. See De Lorenzo, *supra* note 3.

103. See *id.*

104. *Id.*

105. *Id.*

106. *Id.*

107. *Id.*; see also *The Danish Official Dietary Guidelines*, MINISTRY OF FOOD, AGRIC., & FISHERIES OF DEN., <https://en.fvm.dk/focus-on/the-danish-official-dietary-guidelines> (last visited Mar. 16, 2024).

consider the principle that what is healthy for the human body is often healthier for the planet in terms of production.<sup>108</sup>

Denmark's position on the connections between animal agriculture and the climate, as well as on human health,<sup>109</sup> seems to be a strong one considering the efforts embodied in the aforementioned legislation.<sup>110</sup>

#### D. Canada

Canada recognizes tackling methane emissions as a low-cost way of achieving important climate goals.<sup>111</sup> The country is conducting research with the intent of improving emission estimates from agricultural sources.<sup>112</sup> It will do so by collecting more complete data on the practices of ruminant producers that affect enteric methane, and crafting an improved understanding of the factors that go into the formation of methane by microbes in stored manure.<sup>113</sup>

Like the IRA does regarding certain carbon emissions, Canada is looking to impose a credit system that rewards livestock producers' methane reductions.<sup>114</sup> And further, its Emissions Reduction Plan announced an investment of \$100 million into "transformative science" supporting research and the development of metrics surrounding emissions, including methane emissions.<sup>115</sup>

Similar to Denmark, Canada's new dietary guidelines place very little emphasis on meat and dairy.<sup>116</sup> It places a large focus on receiving nutrients, including most protein, from plant-based food sources.<sup>117</sup> Indeed, about half of the recommended food intake in the guidelines is from whole vegetables and fruits.<sup>118</sup>

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108. Liam Pritchett, *New Danish Dietary Guidelines Tied to CO2 Emissions*, LIVEKINDLY, <https://www.livekindly.com/danish-dietary-guidelines-c02-emissions/> (last visited Mar. 16, 2024).

109. *See supra* Section IV.C.

110. *See supra* Section IV.C.

111. *See* GOV'T OF CAN., *FASTER AND FURTHER: CANADA'S METHANE STRATEGY 5* (2022), <https://publications.gc.ca/pub?id=9.915545&sl=0>.

112. *See id.* at 7.

113. *See id.*

114. *See id.* at 20.

115. *Id.* at 24.

116. *See Canada's Food Guide*, GOV'T OF CAN. (Jan. 23, 2024), <https://food-guide.canada.ca/en/>.

117. *Id.*

118. *Id.*



### E. Brazil

Brazil is a massive contributor to global methane emissions.<sup>119</sup> It is the fifth largest methane producer in the world, and about seventy-five percent of its total methane emissions come from livestock alone.<sup>120</sup> Brazil's beef industry has entailed significant deforestation, which contributes to climate change due to the fact that trees soak up CO<sub>2</sub>.<sup>121</sup> One way in which the nation has sought to address the issue is through a “Carbon Neutral Beef” initiative.<sup>122</sup> The Brazilian Agricultural Research Corporation, Embrapa, which is owned by the nation's government, suggested planting eucalyptus trees in the same area where cattle graze, turning pastures into landscapes dotted with trees.<sup>123</sup> Researchers believe that approximately 250–350 trees per hectare is the optimal number to keep up the financial stability of Brazilian farms.<sup>124</sup> That number of trees per hectare will “sequester up to five tonnes of carbon—the equivalent of emissions from about 12 adult cattle.”<sup>125</sup> But this does not effectively address the methane issue.<sup>126</sup>

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119. See Marcio de Oliveira, *The Impact of the Global Methane Pledge on the Brazilian Beef Industry*, CHARLES RIVER ASSOCS. (Apr. 4, 2022), <https://www.crai.com/insights-events/publications/the-impact-of-the-global-methane-pledge-on-the-brazilian-beef-industry/>.

120. *Id.*

121. See Ellen Nemitz, *The Tree Cutting Emissions from Brazilian Beef*, BBC (June 29, 2021), <https://www.bbc.com/future/article/20210629-the-australian-tree-cutting-brazilian-beefs-emissions>.

122. *Id.*

123. *Id.*

124. *Id.* A hectare is a unit of area used in the metric system that is equal to 2.471 acres. *Hectare*, ENCYC. BRITANNICA, <https://www.britannica.com/science/hectare> (last visited Mar. 16, 2024).

125. Nemitz, *supra* note 121.

126. In fact, regulations surrounding the planting of trees with regard to moving to pasture-based farming actually may have the effect of increasing methane production overall—though not from enteric emissions. See Fred Pearce, *Scientists Zero in on Trees as a Surprisingly Large Source of Methane*, YALE ENV'T 360 (June 24, 2019), <https://e360.yale.edu/features/scientists-probe-the-surprising-role-of-trees-in-methane-emissions>. Some argue that pasture-raised cattle produce less methane because they fatten up more quickly on the pasture, and are therefore slaughtered more quickly, giving them less overall time to emit methane. Nemitz, *supra* note 121. But in reality, although trees suck up large amounts of carbon dioxide from the atmosphere, it remains to be seen whether that carbon-sucking outweighs the amount of methane they produce. See Pearce, *supra*. As such, I do not suggest that Congress was remiss in working a tree-planting mandate into the IRA.

### F. Sweden

The Swedish Government has created programming to advise and train farmers on the best ways to reduce emissions.<sup>127</sup> It also offers financial support to farmers for anaerobic manure digestion—a way to prevent ruminant manure from releasing as much methane.<sup>128</sup> The number of cows in the country has been decreasing because of certain programs, which have also lowered emissions.<sup>129</sup>

According to Sweden's long-term strategy for reducing greenhouse gas emissions, the country has been particularly successful at reducing methane emissions.<sup>130</sup> But Sweden's focus with regard to methane seems to be on reducing its emissions from landfills, without much focus at all on enteric fermentation from ruminants.<sup>131</sup> Not to mention, its success seems to have come from incinerating material in landfills, which would seem counterproductive in the overall fight against greenhouse gas emissions considering the CO<sub>2</sub> that is released through incineration—not to mention the other many toxic gases the action produces, such as carbon monoxide and dioxin, which are known carcinogens.<sup>132</sup>

### G. New Zealand

New Zealand's government aims for the country to be carbon neutral by 2050, and is strategizing to significantly reduce greenhouse gas emissions.<sup>133</sup> Part of its plan is to cut back on methane produced by farm animals by ten percent by 2030 and by forty-seven percent by 2050.<sup>134</sup> Though the country is only home to about five million people, it contains well over thirty million ruminants—about ten million cattle and twenty-

127. See GOV'T OFF. OF SWED., MINISTRY OF THE ENV'T & ENERGY, SWEDEN'S SEVENTH NATIONAL COMMUNICATION ON CLIMATE CHANGE 46 (2017), [https://unfccc.int/sites/default/files/resource/6950713\\_sweden-nc7-1-swe\\_nc7\\_20171222.pdf](https://unfccc.int/sites/default/files/resource/6950713_sweden-nc7-1-swe_nc7_20171222.pdf).

128. *Id.* at 56.

129. *Id.* at 76.

130. See GOV'T OFF. OF SWED., MINISTRY OF THE ENV'T, SWEDEN'S LONG-TERM STRATEGY FOR REDUCING GREENHOUSE GAS EMISSIONS 67 (2020), [https://unfccc.int/sites/default/files/resource/LTS1\\_Sweden.pdf](https://unfccc.int/sites/default/files/resource/LTS1_Sweden.pdf).

131. See *id.* at 67–76.

132. Ahmina Maxey, *What's Wrong with Burning Our Trash, Anyway?*, CONSERVATION L. FOUND. (May 14, 2018), <https://www.clf.org/blog/whats-wrong-with-burning-our-trash-anyway/>.

133. Nick Perry, *New Zealand Proposes Taxing Cow Burps, Angering Farmers*, AP NEWS (Oct. 10, 2022, 10:55 PM), <https://apnews.com/article/business-new-zealand-animals-emissions-reduction-climate-and-environment-6f8847bc10ecdd0ba4d5c23bdab5617d>.

134. *Id.*

six million sheep.<sup>135</sup> Farms are the culprit for about fifty percent of New Zealand's greenhouse gas emissions.<sup>136</sup>

Under the proposed rules, farmers would be taxed for the enteric methane emissions of their ruminants starting in 2025.<sup>137</sup> The revenue from the tax would then be invested back into the farm industry to fund research, new technologies, and farmer incentive payments.<sup>138</sup> An educational campaign on the issue complements the plan.<sup>139</sup>

Of course, there are foreseeable issues with a tax of this nature. Though it could decrease enteric methane emissions in New Zealand, it could also increase the cost of meat in the country.<sup>140</sup> Such an increase in the cost of meat domestically could lead New Zealanders to outsource meat production to other nations with less restrictive farming regulations, which could result in a net increase, at least in the short-term, of enteric methane emissions.<sup>141</sup>

New Zealand's proposals have gotten significant pushback,<sup>142</sup> but it is an interesting model for prospective regulation in other jurisdictions, and could have been useful to American legislators in drafting the IRA if the legislators had a deeper interest in reducing enteric methane emissions.

## V. RECOMMENDATIONS

Mainly, the IRA should have been significantly more precise in setting goals, requirements, and expectations regarding taxes, investments, and education surrounding and affecting enteric methane emissions. This Part will pull from the models implemented by other countries and jurisdictions, laid out in Part IV, to craft an ideal, multifaceted blueprint to fill the gaps that the IRA missed in attempting to solve the many crises the nation and world are currently facing.

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135. *Id.*

136. *Id.*

137. *Id.*

138. *Id.*

139. Stefica Nicol Bikes, *New Zealand's School Climate-Change Curriculum Vexes Farmers*, REUTERS (May 6, 2020), <https://www.reuters.com/article/us-climate-change-newzealand-idUSKBN22I0KE/>.

140. See Haites et al., *supra* note 52, at 149.

141. See discussion *infra* Section VI.B and *infra* note 185.

142. See Bikes, *supra* note 139.

*A. Timeline, Taxes, and Incentives*

First, the IRA needed to delegate with more specificity the steps and programs that the Secretary of Agriculture was to proceed with.<sup>143</sup> To incentivize farmers and individuals to move toward the IRA's goals, Congress should have included a timeline to significantly reduce the number of animals produced in the United States—which would lead to the reduction of animal-based products and meat—and incentives in the form of tax credits to consumers and producers of meat and animal products. In alignment with the Global Methane Pledge, a reasonable timeline would be a thirty-percent reduction in methane emissions from ruminants by the year 2030.<sup>144</sup>

The tax on red and processed meats discussed in Section III.B is interesting, but also comes with certain difficulties.<sup>145</sup> This would be a regressive tax, meaning all income levels would pay the same amount and therefore meat purchases for people with higher incomes would bear far less of a burden than their low-income counterparts.<sup>146</sup> This would arguably be an inequitable result for people who are generally more likely to be able to afford processed meats as opposed to other options.<sup>147</sup> As such, a tax of that nature has the possibility of unfairly and disproportionately impacting low-income communities.

With that said, targeted taxes have been shown to have positive results in other areas of health concerns, such as tobacco use and smoking.<sup>148</sup> Studies have found that people of low socioeconomic status decrease spending on products that increase in price with taxes.<sup>149</sup> With regard to cigarettes and tobacco, such taxes likely contributed to at least

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143. See *supra* text accompanying note 6.

144. See GLOBAL METHANE PLEDGE, <https://www.globalmethanepledge.org/> (last visited Mar. 16, 2024).

145. See *supra* Section III.B.

146. See *Regressive Tax*, TAX FOUND., <https://taxfoundation.org/tax-basics/regressive-tax/> (last visited Mar. 16, 2024).

147. See generally Donald R. Nichols & William F. Wempe, *Regressive Tax Rates and the Unethical Taxation of Salaried Income*, 91 J. BUS. ETHICS 553 (2010). Nichols and Wempe primarily discuss taxes on income, as opposed to the essentially indirect tax in the context of food purchases that would be imposed under the regulations discussed here—this could potentially make regular meat products from ruminants unattainable for low-socioeconomic communities. See *id.* at 553. Regardless, regressive taxes are arguably very unfair, especially when considerations of social equity come to light. See generally *id.* (arguing that the United States' regressive income tax system is unfair).

148. See Pearl Bader et al., *Effects of Tobacco Taxation and Pricing on Smoking Behavior in High Risk Populations: A Knowledge Synthesis*, INT'L J. ENV'T RSCH. & PUB. HEALTH, 4118, 4129–31 (2011).

149. *Id.* at 4130–31.

a small reduction in the health inequalities exhibited between low socioeconomic status groups and their higher-income counterparts.<sup>150</sup>

But the most effective option would be an incentive rather than a punishment. The IRA provides tax credits to American households that join the journey to transition to sustainable energy consumption.<sup>151</sup> Such credits come in the form of a “previously-owned clean vehicle” credit, an “energy-efficient home improvement” credit, and a “residential clean energy” credit.<sup>152</sup> These credits essentially grant households the ability to reduce their payments of taxes in exchange for making certain choices regarding sustainability.<sup>153</sup> In the same way, the IRA should have included a tax credit for households that follow a sustainable diet.

The IRA could have used the following language, for example:

#### **Allowance of Credit**

In the case of an individual or household who during a taxable year—

refrains from purchasing food products which come from ruminants,  
or  
purchases alternatives to food products which come from ruminants,

there shall be a credit against the tax imposed by this chapter for the taxable year an amount equal to the lesser of \$500.

A provision like the one laid out directly above would incentivize households to make meaningful changes in their diets by making non-ruminant food products more desirable and accessible. In doing so, the credit would impact Americans’ bodily health through the avoidance of health-compromising meats, thereby indirectly having a positive impact on the environment by reducing demand for food products from ruminants. As such, a provision like this would address the IRA’s goals with regard to both climate change mitigation and reductions in healthcare costs.<sup>154</sup>

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150. *Id.*

151. *See* 26 U.S.C. § 25E.

152. *Id.*; 26 U.S.C. §§ 25C, 25D.

153. *E.g.*, 26 U.S.C. § 25E.

154. *See* Press Release, White House, *supra* note 7.

*B. Investments in Alternatives*

Next, Congress should have more thoroughly laid out investments in alternatives that would shift the United States' food economy toward a heavily plant-based food economy. These investments would go hand-in-hand with the suggested provision laid out above in Section V.A, because households would be incentivized, through tax credits, to buy non-ruminant food products.

Indeed, the IRA, as mentioned above, discusses electric vehicles and broadening infrastructure—which may change the face of transportation.<sup>155</sup> For example, section 70002 provides billions of dollars to the United States Postal Service (“USPS”) for the purchase of “zero-emission delivery vehicles.”<sup>156</sup> This is an amazing step, but the IRA leaves out the possibility of changing Americans' diets for the better.<sup>157</sup> In the same way the IRA allocates money to USPS for investment in an electric fleet, it could allocate money to, for example, the Department of Education to purchase plant-based or non-ruminant food products. The language in the IRA could have been something like:

In addition to amounts otherwise available, there is appropriated to the United States Department of Education for fiscal year 2022, out of any money in the Treasury not otherwise appropriated, the following amounts, to be deposited into the Department's fund established under U.S. Code:

\$100,000,000, to remain available through September 30, 2031, for the purchase of plant-based or non-ruminant food products as alternatives to food products from ruminants.

\$500,000,000, to remain available through September 30, 2031, for the purchase, design, and manufacture of plant-based or non-ruminant food products as alternatives to food products from ruminants.

Such a change would entail cooperation with the private sector to conduct research and development regarding viable and nutritious plant-based alternatives to the products that result in the most enteric methane emissions. Indeed, research has already been and continues to be conducted with regard to lab-grown meat, as opposed to farm- or

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155. See Inflation Reduction Act of 2022, Pub. L. No. 117–169, § 70002, 136 Stat. 1818.

156. *Id.*

157. See, e.g., *id.* § 13401, 136 Stat. at 1954–63. This is the first section of “Part 4—Clean Vehicles,” which is about fifteen pages long. *Id.*

factory farm-raised animals.<sup>158</sup> Lab-grown meat can potentially reduce greenhouse gas emissions, including enteric methane emissions.<sup>159</sup> Presumably, lab-grown meat also has the potential to create a new market for investment and job creation, which could both replace jobs lost as a result of the population's shifting diet and promote general economic growth and strength.

Indeed, transitioning away from a livestock-dependent food system toward a plant-based system could theoretically result in a net increase in jobs. A study from the International Labour Organization looking specifically at Latin America and the Caribbean suggests such a transition would create millions of new jobs.<sup>160</sup>

### C. Education

Any regulations imposed by the government will not fulfill their purpose unless they are accompanied by an educational campaign. Indeed, studies have found that Americans still may not fully understand the significant link between their diets and the changing climate.<sup>161</sup> The United States should follow Canada's lead in revising its dietary guidelines to include healthier and more environmentally friendly advice.<sup>162</sup> But educational programs and campaigns are also needed to convey the significance of the health and environmental impacts of red and processed meats, as well as other products generated by the animal agriculture industry, such as dairy. This is something that the United

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158. See Daniel Sergelidis, *Lab Grown Meat: The Future Sustainable Alternative to Meat or a Novel Functional Food?*, 17 BIOMEDICAL J. SCI. & TECH. RSCH. 12440, 12441 (2019).

159. *Id.*

160. CATHERINE SAGET ET AL., JOBS IN A NET-ZERO EMISSIONS FUTURE IN LATIN AMERICA AND THE CARIBBEAN 107 (2020), [https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/documents/publication/wcms\\_752069.pdf](https://www.ilo.org/wcmsp5/groups/public/---americas/---ro-lima/documents/publication/wcms_752069.pdf).

161. Annick de Witt, *People Still Don't Get the Link Between Meat Consumption and Climate Change*, SCI. AM. (Apr. 11, 2016), <https://blogs.scientificamerican.com/guest-blog/people-still-don-t-get-the-link-between-meat-consumption-and-climate-change/>.

162. See GOV'T OF CAN., *supra* note 116. In the United States, the Senate Select Committee on Nutrition and Human Needs was born in the 1970s to increase nutrition guidance for Americans. *History of Dietary Guidelines*, DIETARY GUIDELINES FOR AMS., <https://www.dietaryguidelines.gov/about-dietary-guidelines/history-dietary-guidelines> (last visited Mar. 16, 2024). During that time, more evidence linking diet to disease was being collected, which allowed the committee to further investigate how nutrition related to the overall health of Americans. *Id.* The committee indicated and officially recognized, among other things, that healthy diets could play an important role in promoting health, increasing productivity, and reducing health care costs. *Id.* Today, this is clearly in line with the goals of the IRA. See Press Release, White House, *supra* note 7. Considering that historical progression, it makes sense to double down on that acknowledgment and continue progress in the United States for what we guide people to eat.

States Department of Education could spearhead in collaboration with the Department of Agriculture. When people are educated on the impacts of their diets, in conjunction with incentives such as taxes or tax credits, a real difference can be made.<sup>163</sup>

To facilitate this initiative, a provision in the IRA could have included language such as:

In addition to amounts otherwise available, there is appropriated to the United States Department of Education for fiscal year 2022, out of any money in the Treasury not otherwise appropriated, the following amounts, to be deposited into the Department's fund established under U.S. Code:

\$10,000,000, to remain available through September 30, 2031, for the development and implementation of Sustainable Living and Eating Curriculum.

Ideally, the IRA would have, in addition to the aforementioned language, provided some guidance to the Secretary of Education with regard to the curriculum that should be implemented. For example, a provision after the allocation of money that requires the curriculum to include pedagogy surrounding healthy diets—including the impact of certain meats on the human body—as well as education surrounding the impact of methane on the environment, and ways the students and their families can reduce their own ecological footprint.

The educational aspect is particularly important to maintaining equity and social justice in the process of societal dietary shifts. A study by the National Bureau of Economic Research found that even when food stores offering healthier options are opened in places considered “food deserts”<sup>164</sup>—low-socioeconomic communities predominantly comprised of people of color—food purchasing and eating habits do not significantly change.<sup>165</sup> People who shop at those new stores seem to continue buying and eating the unhealthy foods they are comfortable with.<sup>166</sup> This fact shows quite clearly the need for educational programs designed to encourage and guide people to make healthier choices.<sup>167</sup> Indeed, many people may be unaware of ruminant-based food products’ effect on bodily

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163. See Haites et al., *supra* note 52, at 149.

164. DUTKO ET AL., *supra* note 68, at 1.

165. Handbury et al., *supra* note 67, at 41–42.

166. *Id.*

167. See *id.*



and environmental health and therefore have no reason to seek out alternatives.<sup>168</sup>

#### *D. Other Specific Regulations and Mandates*

In addition to taxes and incentives, investments, and a focus on education, there are other more ancillary mandates and regulations that act as good examples for actions Congress could have taken. For example, on May 11, 2023, the Supreme Court of the United States affirmed the Ninth Circuit's decision in *National Pork Producers Council v. Ross*, in which the Court upheld a California law prohibiting the sale of pork from animals confined in a manner inconsistent with California standards.<sup>169</sup> In 2018, California voted to enact Proposition 12, which imposes stricter standards on pork producers who seek to sell their products in the state.<sup>170</sup> Particularly, it requires the pork producers to give their sows (female pigs) more space in their confinement—twenty-four square feet per pig to be exact.<sup>171</sup> The law changes the landscape of pork production in the United States.<sup>172</sup> Importantly—and analogous from the perspective of reducing the number of ruminants in the interest of American bodily and environmental wellness—pork producers will likely need to produce less pork, because they simply have less room to produce them if each sow needs more space to herself.<sup>173</sup>

Following the lead of California's Proposition 12, the IRA should have regulated the amount of space required for ruminants in their production of meat and dairy. The indirect result would presumably be a decrease in the number of ruminants, and therefore a reduction in their enteric methane emissions.<sup>174</sup>

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168. See *id.*; Joop de Boer et al., *Help the Climate, Change Your Diet: A Cross-Sectional Study on How to Involve Consumers in a Transition to a Low-Carbon Society*, 98 APPETITE 19, 19–27 (2016).

169. *Nat'l Pork Producers Council v. Ross*, 598 U.S. 356, 363, 390 (2023).

170. See CAL. HEALTH & SAFETY CODE § 25990 (West 2018).

171. *Id.* § 25991(e)(3); see also Ian Millhiser, *The Supreme Court Seems Absolutely Flummoxed by a High-Stakes Case About Pigs*, VOX (Oct. 11, 2022, 3:30 PM), <https://www.vox.com/policy-and-politics/2022/10/11/23398875/supreme-court-pigs-national-pork-producers-ross-california-dormant-commerce-clause>.

172. Millhiser, *supra* note 171.

173. *Id.*

174. See *id.* Aside from the impact of ruminant-based products on human and environmental health, something that has not been discussed in this Note is the moral aspect of animal agriculture. Indeed, there are many who are concerned with the moral implications of animal consumption. See, e.g., Hanna Evensen, *The Ethics of Eating Animals*, HARV. UNIV. SUSTAINABILITY (Mar. 12, 2014), <https://green.harvard.edu/news/ethics-eating-animals> (discussing Harvard philosopher

## VI. COUNTERPOINTS

There are some reasonable worries that may stem from the arguments made in this Note. But it ultimately remains true that the IRA's failure to sufficiently address enteric methane emissions in the face of its goals of mitigating climate change, reducing healthcare costs, and helping the economy was senseless. Below, I will address some likely concerns with regard to my recommendations.

A. *Regulations on Animal Products from Ruminants Are Bad for Farmers and Would Eliminate Jobs Without Replacements.*

Likely the most glaring counterpoint to any suggested regulation of enteric methane emissions of ruminants is the impact that they would have on farmers. Indeed, many farmers would view such regulations the same way they viewed California's Senate Bill 1383—as another form government encroachment, overreach, and overregulation on the animal agriculture industry.<sup>175</sup>

True, regulations on farmers' products are not necessarily in their interest. But they may nonetheless be necessary to achieve the goals of the IRA. In the same way that the interests of the oil industry are not served by a shift toward renewable energy and electric vehicles,<sup>176</sup> the animal agriculture industry is not served by a shift in American diet and the reduced consumption of animal products. But that is the mark of progress. The oil industry and the animal agriculture industry are not

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Christine Korsgaard's perspective on the "bloodbath of cruelty, hidden away behind the closed walls of those farms"). But in terms of making actual progress and convincing people to join in the fight for animal welfare, the moral arguments have largely been abandoned in favor of more practical arguments rooted in economics. Jerry L. Anderson, *Protection for the Powerless: Political Economy History Lessons for the Animal Welfare Movement*, 4 STAN. J. ANIMAL L. & POL'Y 1, 13–14 (2011); cf. Bruce Friedrich & Stefanie Wilson, *Coming Home to Roost: How the Chicken Industry Hurts Chickens, Humans, and the Environment*, 22 ANIMAL L. 103, 103 (2015) (discussing the broad impact of chicken consumption on people, in addition to the moral implications of that consumption).

175. Steffani Fausone, *Senate Bill 1383 Stinks: California's Attempt to Regulate Dairy Cattle Methane Emissions*, 9 CHI. KENT J. ENV'T ENERGY L. 1, 2 (2019).

176. With that said, some major oil companies, such as BP, see the promise of renewable energy sources and are setting goals to transition and refocus their products to account for the direction of the future. See *Getting to Net Zero: Climate Advocacy in the U.S.*, BP, [https://www.bp.com/en\\_us/united-states/home/who-we-are/advocating-for-net-zero-in-the-us.html](https://www.bp.com/en_us/united-states/home/who-we-are/advocating-for-net-zero-in-the-us.html) (last visited Mar. 16, 2024). In fact, BP particularly recognizes the need to reduce methane emissions, and even suggests increased regulations. See *Methane Emissions and Natural Gas*, BP, [https://www.bp.com/en\\_us/united-states/home/who-we-are/advocating-for-net-zero-in-the-us/methane-emissions.html#accordion\\_methane-emissions-advocacy-activities](https://www.bp.com/en_us/united-states/home/who-we-are/advocating-for-net-zero-in-the-us/methane-emissions.html#accordion_methane-emissions-advocacy-activities) (last visited Mar. 16, 2024).

industries of the future.<sup>177</sup> It is also important to remember who the main producers of ruminants and enteric methane are—large companies that mass produce cattle.<sup>178</sup>

Further, manufacturing and job creation in the United States is an important focus of the IRA and pertains to its purpose. Section 40007, for example, involves investments from the Treasury into “projects located in the United States that produce, transport, blend, or store sustainable aviation fuel, or develop, demonstrate, or apply low-emission aviation technologies.”<sup>179</sup> The IRA provides over \$50 billion in manufacturing investments related to building a cleaner American energy infrastructure.<sup>180</sup> That new infrastructure will require workers.<sup>181</sup> Indeed, it is estimated that nineteen million jobs would be created in Latin America alone as a result of a shift to plant-based food systems, and nothing seems to indicate a similar job explosion would not occur in the United States.<sup>182</sup>

Where production of certain ruminant-related products is reduced due to decrease in demand, demand for other farm-made products will increase. Nothing stops farmers from shifting their businesses in the direction of demand.

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177. See Alec Tyson et al., *Americans Largely Favor U.S. Taking Steps to Become Carbon Neutral by 2050*, PEW RSCH. CTR. (Mar. 1, 2022), <https://www.pewresearch.org/science/2022/03/01/americans-largely-favor-u-s-taking-steps-to-become-carbon-neutral-by-2050/>. Indeed, though it will take time, the vast majority of Americans want the country to take steps toward becoming carbon neutral. *Id.*; see also *The Future of Food: Meatless?*, MCKINSEY: THE NEXT NORMAL, <https://www.mckinsey.com/featured-insights/the-next-normal/alternative-proteins> (last visited Mar. 16, 2024).

178. Polansek, *supra* note 34.

179. Inflation Reduction Act of 2022, Pub. L. No. 117–169, 136 Stat. 1818, 2030.

180. See *id.*; see also Leah Garden, *How Will the Inflation Reduction Act Spur Job Creation for the Climate Tech Sector?*, GREENBIZ (Oct. 19, 2022), <https://www.greenbiz.com/article/how-will-inflation-reduction-act-spur-job-creation-climate-tech-sector>.

181. By 2021, tens of millions of people worldwide were working jobs related to renewable energy. *Renewable Energy Jobs Have Reached Twelve Million Globally*, INT’L LAB. ORG. (Oct. 21, 2021), [https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS\\_823759/lang-en/index.htm](https://www.ilo.org/global/about-the-ilo/newsroom/news/WCMS_823759/lang-en/index.htm).

182. See SAGET ET AL., *supra* note 160, at 107; Lasse Brunn, *Transforming Lives: The Job Creation Potential of a Just Livestock Transition*, DOWNTOEARTH (Dec. 27, 2021), <https://www.downtoearth.org.in/blog/agriculture/transforming-lives-the-job-creation-potential-of-a-just-livestock-transition-80868>.

*B. Increased Costs Will Be Shifted onto the Consumer, Resulting in Outsourcing and Creating More Serious Emissions Problems Because There Are Fewer Regulations Elsewhere.*

As discussed above, Brazil, like the United States, is a massive contributor to enteric methane emissions.<sup>183</sup> It is not far-fetched to assume that where American-produced beef, for example, increases in price due to a tax on production, Brazilian beef could ultimately be the cheaper option, resulting in an increase in beef production in Brazil to meet the demand.

To prevent a net increase in enteric methane emissions resulting from a backfiring tax, the United States could impose a tariff on meat produced outside of the country. This will result in Americans being forced to spend more on products from ruminants, regardless of whether they are produced domestically or outsourced.<sup>184</sup> But this is a positive feature of such regulations as opposed to a defect. Indeed, if the goal of the IRA is to decrease the cost of healthcare, Americans would conceivably be spending more money on healthier alternatives to animal products. But tariffs will not work in every case, which brings us to the next counterpoint.

*C. Effort and Resources Spent Toward Mitigating Methane Emissions Are Wasted Because of Nations That Are Reluctant to Join the Mitigation Effort.*

Why spend so much effort attempting to reduce methane emissions in these ways if other nations are just going to continue their own production? For example, China and Russia are both excessive producers of methane, and neither has signed the Global Methane Pledge to reduce

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183. See Nemitz, *supra* note 121; Oliveira, *supra* note 119, at 1.

184. Some may argue that outsourcing animal products from other countries could act as a measure pushing back against inflation. But in reality, outsourcing generally works as a protection against inflation with regard to individual businesses, not necessarily with regard to a country as a whole. See Stephen King, *Inflationary Times: Ways to Use Outsourcing to Help Your Business*, FORBES (Aug. 3, 2022), <https://www.forbes.com/sites/forbesbusinesscouncil/2022/08/03/inflationary-times-ways-to-use-outsourcing-to-help-your-business/?sh=26a6afcc96e9>. Indeed, individual businesses can protect themselves against inflation by outsourcing because it reduces their overhead costs, allows them wider access to industry experts, leads to a focus on running the business operations more efficiently, and optimizes spending by only paying for necessities. See *id.* Ultimately, though, the United States would need restrictions on outsourcing if animal agriculture regulations increased the price to help ensure a net reduction of emissions and prevent other sources from exploiting their government's lack of methane regulations to produce even more product, thereby increasing emissions. See *id.*

methane emissions and limit global warming to 1.5 degrees Celsius.<sup>185</sup> And more surprisingly, Turkmenistan—a notoriously isolated nation with an energy sector that is opaque to outsiders—is one of the world’s worst methane emitters.<sup>186</sup> Considering Turkmenistan’s seeming reluctance to provide data regarding its energy production, in addition to its strong economic connection to China with regard to energy exports, it can be assumed methane reduction is not a priority for the nation.<sup>187</sup>

But there are a few reasons this counterpoint does not prove that all hope is lost for the United States’ efforts, in conjunction with other allied nations, to reduce methane emissions. First, a reduction is a reduction. If the United States, for example, had no barriers in place with regard to methane emissions, imagine how much worse the problem could be when added to the emissions of nations like China. But further, China is indeed toying with the idea of controlling its methane production.<sup>188</sup> And Turkmenistan has taken some small steps in reducing its own impact, such as restoring forests and improving land use, in addition to its young people—the future generations of the country—being generally more committed to sustainability than their forbearers.<sup>189</sup>

And again, the suggestions and argument in this Note are also concerned with overall health (in terms of diet) and financial wellness of the American people. Even if the environmental aspects of this Note’s suggestions are stymied to an extent by the actions of other nations, there are still other benefits that can be conferred by taking action to reduce the effect of ruminants on the U.S. population.

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185. *Methane Emissions*, WORLD BANK, <https://data.worldbank.org/indicator/EN.ATM.METH.KT.CE> (last visited Mar. 16, 2024); see also GLOBAL METHANE PLEDGE, *supra* note 144.

186. *Methane Emissions*, *supra* note 185; see also Aaron Clark & Matthew Campbell, *Turkmenistan’s Dirty Secret*, BLOOMBERG (Oct. 19, 2021), <https://www.bloomberg.com/features/top-methane-gas-leak-problem-2021/>.

187. Clark & Campbell, *supra* note 186; see also Yew Lun Tian et al., *China’s Xi Calls for Greater Cooperation with Turkmenistan on Natural Gas*, REUTERS (Jan. 6, 2023), <https://www.reuters.com/world/asia-pacific/chinas-xi-calls-greater-cooperation-with-turkmenistan-natural-gas-2023-01-06/>.

188. David Stanway, *China Announces Plan to Curb Rising Methane Emissions but Challenges Await*, REUTERS (Nov. 9, 2022), <https://www.reuters.com/business/cop/china-announces-plan-curb-rising-methane-emissions-challenges-await-2022-11-09/>.

189. *Joining Forces to Tackle the Impact of Climate Change in Turkmenistan*, U.N. SUSTAINABLE DEV. GRP. (Apr. 4, 2022), <https://unsdg.un.org/latest/blog/joining-forces-tackle-impact-climate-change-turkmenistan>.

## VII. CONCLUSION

Overall, the goals of the IRA are laudable—but considering the significance that the Act placed on mitigating climate change, reducing healthcare costs, and stabilizing the economy,<sup>190</sup> it is perplexing that Congress would leave such a glaring and blatant gap in its efforts to achieve its goals. Reduction of enteric methane emissions has the potential to address *all* the main goals and purposes of the IRA. The same emphasis that was placed on carbon emissions and investments in a shift away from carbon-releasing methods of transportation and other carbon-producing practices<sup>191</sup> should also have been placed on practices resulting in ruminants' production of methane. Doing so would have been a major step in the direction of progress and a signal for a safer and more just future for the American people.

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190. See generally Inflation Reduction Act of 2022, Pub. L. No. 117–169, 136 Stat. 1818; Press Release, White House, *supra* note 7.

191. See generally Inflation Reduction Act of 2022.