

Accounting for Taste: Trade Law Implications of Taxing Meat to Fight Climate Change

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INTRODUCTION

Because the Earth’s climate may be near tipping points to major change, the need to act is increasingly pressing Only with the recognition of the urgency of this issue and the political will to commit resources to comprehensively mitigate both CO₂ and non-CO₂ greenhouse gas emissions will meaningful progress be made on climate change. For an effective and rapid response, we need to increase awareness among the public and policymakers that what we choose to eat has important consequences for climate change.¹

Worldwide, policymakers and advocates interested in combatting global climate change have focused primarily on the energy and transportation sectors and the large amount of carbon dioxide emitted when consumers and producers burn fossil fuels. However, these are not the only emitters of greenhouse gases

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1. William J. Ripple et al., *Ruminants, Climate Change and Climate Policy*, 4 NATURE CLIMATE CHANGE 2, 4 (2014).

(“GHGs”) contributing to global climate change. Agriculture, particularly animal agriculture, is one of the largest contributors to climate change.² Policymakers and nongovernmental organizations in the United States have, with some notable exceptions,³ been reluctant to address the contributions of animal agriculture to climate change. However, the scientific community has not ignored animal agriculture and has drawn attention to the impact that global meat consumption has on the planet.⁴ In recent years, a number of scientists have recommended measures to address animal agriculture’s impact on climate change, including a tax on meat to address some of the negative externalities of meat production.⁵ Such measures reflect the belief of many scientists that “reductions in ruminant numbers and ruminant meat production would simultaneously benefit global food security, human health and environmental conservation.”⁶ Carbon taxes imposed by legislators on the energy and transportation sectors have largely succeeded in reducing carbon emissions.⁷ Additionally, if Congress imposes a tax on meat, the United States could benefit financially.⁸

2. See, e.g., Simon Peter, Michael Hartmann & Werner Hediger, *Modeling the Structural Adjustment Process in Swiss Agriculture to Estimate Future Greenhouse Gas and Nitrogen Emissions and Evaluate Policy Options*, INST. OF AGRIC. ECON. 2 (2006).

3. See, e.g., Robert Goodland & Jeff Anhang, *Livestock and Climate Change: What if the Key Actors in Climate Change Are . . . Cows, Pigs, and Chickens?*, WORLD WATCH (Nov.-Dec. 2009), at 11; ENVTL. WORKING GRP., MEAT EATER’S GUIDE TO CLIMATE CHANGE + HEALTH (2011), available at <http://www.ewg.org/meateatersguide/a-meat-eaters-guide-to-climate-change-health-what-you-eat-matters/>; Jake Conway, *All Our Water Is Going to a Plant We Don’t Eat to Support a Diet We Don’t Need*, RAINFOREST ACTION NETWORK BLOG (Apr. 8, 2014), available at http://www.ran.org/all_our_water_is_going_to_a_plant_we_don_t_eat_to_support_a_diet_we_don_t_need.

4. See, e.g., HENNING STEINFELD ET AL., LIVESTOCK’S LONG SHADOW: ENVIRONMENTAL ISSUES AND OPTIONS (2006); M.M. Mekonnen & A.Y. Hoekstra, *The Green, Blue and Grey Water Footprint of Farm Animals and Animal Products*, 48 VALUE OF WATER RESEARCH REPORT SERIES 1, 5 (Dec. 2010); Mario Herrero et al., *Biomass Use, Production, Feed Efficiencies, and Greenhouse Gas Emissions from Global Livestock Systems*, PROCEEDINGS NAT’L ACAD. SCIS. 20888 (2013); M. Berners-Lee et al., *The Relative Greenhouse Gas Impacts of Realistic Dietary Choices*, 43 ENERGY POL’Y 184 (2012).

5. See, e.g., Stefan Wirsenius, Fredrik Hedenus & Kristina Mohlin, *Greenhouse Gas Taxes on Animal Food Products: Rationale, Tax Scheme and Climate Mitigation Effects*, 108 CLIMATIC CHANGE 159 (2010); Ripple et al., *supra* note 1, at 3; Anders Nordgren, *Ethical Issues in Mitigation of Climate Change: The Option of Reduced Meat Production and Consumption*, 25 J. AGRIC. ENVTL. ETHICS 563, 578 (2012); Alla A. Golub et al., *Global Climate Policy Impacts on Livestock, Land Use, Livelihoods, and Food Security*, 110 PROCEEDINGS NAT’L ACAD. SCIS. 20894 (2013); Louise Dyhr Edjabou & Sinne Smed, *The Effect of Using Consumption Taxes on Foods to Promote Climate Friendly Diets—The Case of Denmark*, 39 FOOD POLICY 84 (2013); Peter, Hartmann & Hediger, *supra* note 2, at 17.

6. Ripple et al., *supra* note 1, at 2; see also Edjabou & Smed, *supra* note 5, at 84.

7. See, e.g., David P. Vincent, *Internalizing Externalities: An Economic and Legal Analysis of an International Carbon Tax Regime*, 92 OR. L. REV. 163, 174 (2013); Chris Mooney, *Here’s Why B.C.’s Carbon Tax Is Super Popular—And Effective*, GRIST (Mar. 27, 2014), <http://grist.org/climate-energy/heres-why-b-c-s-carbon-tax-is-super-popular-and-effective/>; Elisabeth Rosenthal, *Carbon Taxes Make Ireland Even Greener*, N.Y. TIMES, Dec. 27, 2012, available at www.nytimes.com/2012/12/28/science/earth/in-ireland-carbon-taxes-pay-off.html.

8. See DAVID ROBINSON SIMON, MEATONOMICS: HOW THE RIGGED ECONOMICS OF MEAT AND DAIRY MAKE YOU CONSUME TOO MUCH—HOW TO EAT BETTER, LIVE LONGER, AND SPEND SMARTER 204-12 (2013); Charles Kenny, *The Economic Case for Taxing Meat*, BUSINESSWEEK: GLOBAL ECON., Mar. 31, 2014, available at <http://www>.

At the same time, it seems unlikely that U.S. lawmakers would adopt such a tax. Congressional attempts to address climate change have been largely unsuccessful.⁹ Moreover, American taxpayers currently heavily subsidize the animal agriculture industry.¹⁰ Rather than attempting to address the negative externalities imposed on society by animal agriculture, this policy regime creates a perverse incentive for individuals to over-consume animal products at great cost not only to the environment but also to human health¹¹ (and, of course, to the animals as well). If Congress seriously intends to address climate change, it must be willing to consider all viable options. A tax on meat based on GHG emissions could begin to reverse these incentives and account for negative externalities through the “polluter pays” principle.¹² In the absence of global action, it is important that individual nations explore options to address climate change within the international trade law regime.

To have any effect on global GHG emissions, such a tax should apply to both imported and domestically produced meat. The political dynamics in the United States and the influence of exporters of U.S. meat make it likely that policymakers would heavily debate exempting exports from the tax. Most countries that have debated a GHG emissions tax have found it necessary to exempt certain domestic industries in order for such a tax to gain political support.¹³ Proposals for carbon taxes in the 1990s were unsuccessful because energy-intensive industries opposed them.¹⁴ According to other commentators, “such opposition” means that “no national government would be able to implement a carbon tax without offering concurrent measures to lessen the burden on the [affected] sectors.”¹⁵ Lawmakers considering such a proposal must be prepared to tackle conditions such as these.

businessweek.com/articles/2014-03-31/the-economic-case-for-taxing-meat#p2. *But cf.* Keith A. Kendall, *Carbon Taxes and the WTO—A Carbon Charge Without Trade Concerns?*, 29 ARIZ. J. INT’L & COMP. L. 49, 54 (2012) (arguing that because the purpose of the tax is to realign costs to rectify negative externalities, it should not be viewed as a revenue-raising opportunity).

9. *See, e.g.*, Coral Davenport, *Political Rifts Slow U.S. Effort on Climate Laws*, N.Y. TIMES, Apr. 14, 2014, available at www.nytimes.com/2014/04/15/us/politics/political-rifts-slow-us-effort-on-climate-laws.html.

10. *See* SIMON, *supra* note 8, at 202; *Agriculture and Health Policies in Conflict: How Food Subsidies Tax Our Health*, PHYSICIANS’ COMM. FOR RESPONSIBLE MED., <http://www.pcrm.org/health/reports/agriculture-and-health-policies-ag-versus-health> (last visited Feb. 18, 2015).

11. *See* SIMON, *supra* note 8.

12. *See, e.g.*, David Blandford, *International Trade Disciplines and Policy Measures to Address Climate Change Mitigation and Adaptation in Agriculture*, INT’L CTR. FOR TRADE & SUSTAINABLE DEV., available at e15initiative.org/wp-content/uploads/2014/11/E15_Agriculture_Blandford_FINAL.pdf.

13. *See, e.g.*, Vincent, *supra* note 7, at 175; Kendall, *supra* note 8; Joost Pauwelyn, *Carbon Leakage Measures and Border Tax Adjustments Under WTO Law*, in RESEARCH HANDBOOK ON ENVIRONMENT, HEALTH AND THE WTO (Geert Van Calster & Denise Prevoost eds., 2013).

14. Vincent, *supra* note 7, at 175.

15. *Id.*

Most commentators suggest that a border tax adjustment (“BTA”), which rebates the tax for exports and imposes it on imports, can address these issues.¹⁶ A BTA is preferable to an exemption because the latter “unnecessarily reduces the revenue from the taxes, impairs their effectiveness as environmental measures, and raises concerns over inter-industry and inter-sectoral fairness.”¹⁷ However, such a BTA raises a number of trade law implications. This note addresses those implications and offers a number of suggestions as to how to create a tax that complies with the United States’ obligations to the World Trade Organization (“WTO”).

Part I provides an overview of the science of climate change, the climate change implications of producing animals for food, some of the suggested proposals to address those implications, and ways to implement the proposals. Part II discusses the relevant legal WTO obligations in considering such a tax and whether a unilateral tax is likely to pass muster. Finally, Part III explores other options to address animal agriculture’s negative externalities by focusing on international collaboration and alternative domestic steps. Advocates and policy-makers must take into account various considerations in attempting to address climate change and animal agriculture’s contribution to it. Congress may determine that a tax on the GHG emissions of meat, designed within the confines of WTO law, effectively does this. Alternatively, lawmakers may determine that an alternative measure—such as ending agricultural subsidies or helping to craft an international agreement—is the preferable course of action.

I. ADDRESSING THE CLIMATE CHANGE EFFECTS OF ANIMAL AGRICULTURE

Climate change poses a considerable threat to humanity and to the planet. While the existence and potential implications of climate change have been known for decades, the outlook has only worsened. According to the Intergovernmental Panel on Climate Change (“IPCC”), the evidence of human influence on climate change has grown, and it is “*virtually certain* that global mean sea level rise will continue beyond 2100, with sea level rise due to thermal expansion to continue for many centuries.”¹⁸ While policymakers and advocates primarily focus on transportation and energy, animal agriculture is a significant contributor

16. See, e.g., *id.*; Kayla Gates, Note: *The Certainties in Life: Death, Taxes, and Global Warming?: An Analysis of Border Tax Adjustments as Incentives for Promoting Worldwide Energy Efficiency*, 36 SUFFOLK TRANSNAT’L L. REV. 397 (2013); Kendall, *supra* note 8; J. ANDREW HOERNER & FRANK MULLER, CARBON TAXES FOR CLIMATE PROTECTION IN A COMPETITIVE WORLD 2 (1996), available at rprogress.org/publications/1996/swiss_1996.pdf; BISWAJIT DHAR & KASTURI DAS, THE EUROPEAN UNION’S PROPOSED CARBON EQUALIZATION SYSTEM: CAN IT BE WTO COMPATIBLE? (2009), available at http://www.eaber.org/sites/default/files/documents/RIS_Dhar_2009.pdf; DAVID BLANDFORD & TIM JOSLING, GREENHOUSE GAS REDUCTION POLICIES AND AGRICULTURE: IMPLICATIONS FOR PRODUCTION INCENTIVES AND INTERNATIONAL TRADE DISCIPLINES (2009), available at http://www.agritrade.org/Publications/documents/Blandford_JoslingWEB_Final_3.pdf.

17. Hoerner & Muller, *supra* note 16.

18. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE [hereinafter IPCC], CLIMATE CHANGE 2013: THE

to climate change and one that they should address. This section summarizes the science regarding animal agriculture's contribution to climate change and environmental damage. It also details how taxes can be used to address negative externalities so that products' prices reflect their true costs. Finally, it tackles ways to design a tax to address the issue of animal agriculture's contribution to climate change.

A. CLIMATE CHANGE AND ANIMAL AGRICULTURE'S IMPACT

The IPCC recently issued a series of reports detailing the current science on climate change,¹⁹ the current and likely future impacts,²⁰ and potential mitigation measures that nations and the global community can take.²¹ These reports demonstrate that the impacts of climate change are likely to be severe and that international and domestic actors must take preventative and mitigating steps. According to the IPCC, climate change will cause an "alteration of ecosystems, disruption of food production and water supply, damage to infrastructure and settlements, morbidity and mortality, and consequences for mental health and human well-being" as well as an increase in violent conflict.²² Other impacts include "extreme weather events, sea level rise, climate refugees, adverse impacts on indigenous populations, and [the] spreading of diseases."²³ Climate change will affect marginalized individuals and communities such as those in the Global South most dramatically.²⁴

Agriculture is a major contributor to climate change, contributing at least a third of global GHGs.²⁵ Of that total, animal agriculture constitutes approximately eighty percent, with ruminants (cows and sheep) contributing significantly more than other animals.²⁶ A landmark United Nations Food and Agriculture Organization study found that animal agriculture contributes as much as eighteen

PHYSICAL SCIENCE BASIS: SUMMARY FOR POLICYMAKERS 28 (2013), available at http://www.climatechange2013.org/images/report/WG1AR5_SPM_FINAL.pdf.

19. IPCC, CLIMATE CHANGE 2013: THE PHYSICAL SCIENCE BASIS (2013), available at http://www.climatechange2013.org/images/report/WG1AR5_ALL_FINAL.pdf.

20. IPCC, CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY (2014), available at <http://ipcc-wg2.gov/AR5/report/>.

21. See IPCC, CLIMATE CHANGE 2014: MITIGATION OF CLIMATE CHANGE (2014), available at www.mitigation2014.org/report/publication.

22. See IPCC, CLIMATE CHANGE 2014: IMPACTS, ADAPTATION, AND VULNERABILITY, SUMMARY FOR POLICYMAKERS 6, 20 (2014), available at http://ipcc-wg2.gov/AR5/images/uploads/IPCC_WG2AR5_SPM_Approved.pdf.

23. Henrik Lerner et al., *Stakeholders on Meat Production, Meat Consumption and Mitigation of Climate Change: Sweden as a Case*, 26 J. AGRIC. ENVTL. ETHICS 663, 674 (2013).

24. See IPCC, *supra* note 22, at 6, 18-20.

25. See Wirsenius, Hedenus & Mohlin, *supra* note 5, at 160.

26. Anthony J. McMichael et al., *Food, Livestock Production, Energy, Climate Change, and Health*, 370 THE LANCET 1253, 1253-54 (2007); see Francesco N. Tubiello et al., *The FAOSTAT Database of Greenhouse Gas Emissions from Agriculture*, 8 ENVTL. RESEARCH LETTERS 1, 6 (2013).

percent of total GHGs.²⁷ Other experts have suggested that animal agriculture alone contributes half of total GHG emissions.²⁸ Regardless of the exact figure, the contribution is considerable. Most of animal agriculture's emissions come from methane and nitrous oxide, two GHGs that are less abundant than carbon dioxide but much more potent.²⁹ In the United States alone, "agriculture represents 8.6% of the nation's total GHG emissions, including 80% of its nitrous oxide emissions and 31% of its methane emissions."³⁰ A recent analysis from the National Academies of Science indicates that methane emissions in the United States are significantly greater than other estimates have shown.³¹ In particular, "livestock operations across the U.S. have emissions approximately twice that of recent inventories."³² By any analysis, animal agriculture is a significant contributor to climate change and policymakers should focus on it.

Animal agriculture is also unsustainable for other reasons. Most agricultural land is used for growing crops that will be fed to animals, "while only 8 percent is used to grow food for direct human consumption."³³ In addition, the animal agriculture industry "uses dwindling supplies of freshwater, destroys forests and grasslands, and causes soil erosion, while pollution and the runoff of fertilizer and animal waste create dead zones in coastal areas and smother coral reefs."³⁴ These circumstances have tremendous consequences for individuals, communities, and the planet.

Individuals in the United States, Canada, and Europe currently eat significantly more meat than those in the Global South.³⁵ Meanwhile, individuals in developing countries eat more meat now than ever before as they commonly see meat consumption as an indicator of increased wealth of both nations and individuals.³⁶ "If the entire world population were to consume as much meat as the

27. STEINFELD ET AL., *supra* note 4.

28. Goodland & Anhang, *supra* note 3.

29. See, e.g., McMichael et al., *supra* note 26, at 1253; Annika Carlsson-Kanyama & Alejandro D. González, *Potential Contributions of Food Consumption Patterns to Climate Change*, 89 AM. J. CLIN. NUTR. 1704S, 1704S-1705S (2009); DOUG GURIAN-SHERMAN, UNION OF CONCERNED SCIENTISTS, RAISING THE STEAKS: GLOBAL WARMING AND PASTURE-RAISED BEEF PRODUCTION IN THE UNITED STATES, 12-13, 20-22 (ed., 2011).

30. Ann Sorensen & Jimmy Daukas, *Policy Approaches to Energy and Resource Use in U.S. Agriculture*, 25 RENEWABLE AGRIC. FOOD SYS. 109, 110 (2010).

31. See Scot M. Miller et al., *Anthropogenic Emissions of Methane in the United States*, 110 PROCEEDINGS NAT'L ACAD. SCIS. 1 (2013).

32. *Id.* at 5.

33. Cassandra Brooks, *Consequences of Increased Global Meat Consumption on the Global Environment*, STANFORD WOODS, <https://woods.stanford.edu/environmental-venture-projects/consequences-increased-global-meat-consumption-global-environment> (last visited Feb. 18, 2015).

34. *Id.*

35. See Lerner et al., *supra* note 23, at 664; see also HEINRICH BÖLL FOUND. & FRIENDS OF THE EARTH EUROPE, MEAT ATLAS: FACTS AND FIGURES ABOUT THE ANIMALS WE EAT 10 (2014), available at http://www.foeeurope.org/sites/default/files/publications/foee_hbf_meatatlas_jan2014.pdf (comparing per capital consumption of meat in the developing and developed nations).

36. See, e.g., World Health Org., *Global and Regional Food Consumption Patterns and Trends*, http://www.who.int/nutrition/topics/3_foodconsumption/en/index4.html (last visited Feb. 18, 2015); RONALD TROSTLE &

Western world does . . . the global land required would be two-thirds more than what is presently used.”³⁷ Moreover, “[f]urther trade liberalisation is likely to increase livestock environmental pressure in countries where production would increase[,] such as Australia and New Zealand, requiring careful attention to the effectiveness of policies.”³⁸

Experts have estimated that the negative externalities of U.S. agricultural production, including harm to people and ecosystems, government regulation, and cleanups not internalized by producers or consumers, total between \$9.4 and \$20.6 billion per year.³⁹ Another commentator has estimated that U.S. taxpayers spend nearly \$415 billion annually on negative externalities from animal agriculture, including health and environmental costs.⁴⁰ However, “these myriad environmental effects are obscured by a production and trade system that both undervalues various environmental inputs and understates the potential environmental harm inherent in the production process.”⁴¹ Policymakers should consider means of incorporating these costs into the product. One potential way to address growing meat consumption and its environmental impact is to tax GHG emissions.

B. INCORPORATING EXTERNALITIES INTO PRODUCT PRICES AND INFLUENCING CONSUMER PURCHASING DECISIONS

A tax on the GHG emissions of animal agriculture would be “a form of Pigouvian tax—a tax imposed on market actors to rectify some form of market failure, specifically the imposition of negative externalities.”⁴² A Pigouvian tax is “not designed specifically to reduce the relevant activity (although this is its usual effect),” but rather “[t]he intention is to align the costs of the activity with the benefits, specifically burdening the recipient of the benefits with those costs.”⁴³ The IPCC report mentioned above identifies GHG emission taxes as one of the steps that could mitigate the impact of climate change.⁴⁴

Scientists who have explored this option are optimistic about its potential. Whereas consumers are unlikely to adjust gasoline and energy consumption

RALPH SEELEY, UNITED STATES DEP’T OF AGRIC., DEVELOPING COUNTRIES DOMINATE WORLD DEMAND FOR AGRICULTURAL PRODUCTS, <http://www.ers.usda.gov/amber-waves/2013-august/developing-countries-dominate-world-demand-for-agricultural-products.aspx#U1BTYVfRXCo> (last visited Feb. 18, 2015).

37. Brooks, *supra* note 33.

38. ORG. FOR ECON. COOP. & DEV., AGRICULTURE, TRADE AND THE ENVIRONMENT: THE DAIRY SECTOR 25 (2004).

39. See James N. Galloway et al., *International Trade in Meat: The Tip of the Pork Chop*, 36 *AMBIO* 622, 623 (2007).

40. See SIMON, *supra* note 8.

41. Galloway et al., *supra* note 39, at 623.

42. Kendall, *supra* note 8, at 51.

43. *Id.* at 54.

44. See IPCC, CLIMATE CHANGE 2014: MITIGATION OF CLIMATE CHANGE SUMMARY FOR POLICYMAKERS 31 (2014), available at http://report.mitigation2014.org/spm/ipcc_wg3_ar5_summary-for-policymakers_approved.pdf.

significantly, meat consumption is more flexible: consumers can more easily substitute meat with alternative plant-based, less climate-intensive products.⁴⁵ According to an analysis discussing the European Union, “if pork or chicken are substituted for cattle meat (beef), total GHG emissions are reduced by about 80%” while “[i]f beans containing an equal amount of protein are substituted for cattle meat, emissions are cut by more than 99%.”⁴⁶ Similarly, a study that looked at taxing methane emissions worldwide indicated that such a tax would have a noticeable impact on the consumption of ruminants.⁴⁷ While scientists have focused primarily on ruminants, the contribution of non-ruminants (primarily pigs and chickens) is not insignificant. “[N]onruminants consume 72% of all animal feed that is grown on arable land[,]”⁴⁸ and this figure is growing.⁴⁹ Therefore, some scientists have focused specifically on non-ruminant contributions to environmental damage.⁵⁰

The science provides ample support for designing a tax that will address some of these negative externalities. Designing a tax that will actually achieve these goals, however, involves consideration of a number of market forces and an understanding of the global marketplace, as well as various political concerns. The following section addresses some of these considerations.

C. DESIGNING A TAX THAT ACHIEVES ITS INTENDED GOALS

Imposing a tax only on domestic products would not generate trade law concerns, but it would raise a number of other issues. On the one hand, if other countries do not impose a similar tax, the costs of production for the animal agriculture industry in the United States would potentially exceed those of similar industries in other nations, making it more difficult for the U.S. meat industry to compete globally.⁵¹

According to trade law expert Joost Pauwelyn, “with a domestic climate policy in place, imports from countries *without* mandatory carbon restrictions may gain a price advantage over domestic goods[,]” creating asymmetry such as the one “that led the US Senate to reject the Kyoto Protocol.”⁵² As noted above,

45. SIMON, *supra* note 8, at 97-99; *see also* Craig A. Gallet, *A Meta-Analysis of the Price Elasticity of Meat: Evidence of Regional Differences*, 2 BUS. ECON. RESEARCH 14, 14 (2012); Tatiana Andreyeva, Michael W. Long & Kelly D. Brownell, *The Impact of Food Prices on Consumption: A Systematic Review of Research on the Price Elasticity of Demand for Food*, 100 AM. J. PUB. HEALTH 216 (2010).

46. Wirsenius, Hedenus & Mohlin, *supra* note 5, at 163.

47. Nigel Key & Gregoire Tallard, *Mitigating Methane Emissions from Livestock: A Global Analysis of Sectoral Policies*, 112 CLIMATIC CHANGE 387, 387 (2012).

48. Galloway et al., *supra* note 39, at 622.

49. *See id.*

50. *See id.*

51. *See, e.g.*, David Blandford, Richard N. Boisvert & Linda Fulponi, *Nontrade Concerns: Reconciling Domestic Policy Objectives with Freer Trade in Agricultural Products*, 85 AM. J. AGRIC. ECON. 668, 671 (2003).

52. Pauwelyn, *supra* note 13, at 449.

proposals for carbon taxes failed in the United States and other nations in the 1990s because of concerns about the impact on domestic industry.⁵³ This reality poses acute challenges in agriculture because of the typically small profit margins in the sector.⁵⁴ Additionally, government actors tend to be protective of agricultural interests.⁵⁵

Moreover, a tax on only domestic production could create an incentive not to reduce meat production and consumption but merely to replace domestically-produced meat with imports from countries without such a tax.⁵⁶ As a result, the tax would not reduce global production overall, and the potential GHG-reduction impact of the tax would not occur. This phenomenon is known as emission leakage.⁵⁷ For example, the authors of a study investigating methane emissions found that imposing a methane tax only in the United States would significantly *increase* global emissions because industry would simply move abroad.⁵⁸

Policies that adjust import and export taxes “by taxing domestically consumed goods (both imported and domestically produced) based on their embodied emissions and by not taxing exported goods[,]” for example, could rectify issues such as emission leakage.⁵⁹ As a result, domestic producers are not disadvantaged, and “production does not shift outside of the taxed region.”⁶⁰ Therefore, policymakers can address both concerns of competitiveness and effectiveness.

However, members of Congress will likely be critical of a measure affecting trade due to concern that U.S. trade partners will challenge the measure for failing to comply with U.S. WTO obligations. This was a significant issue during the debate over the American Clean Energy and Security Act, which passed in the U.S. House of Representatives in 2009.⁶¹ The bill would have required that “import tariffs be applied to carbon-intensive products in 2020 unless the

53. See, e.g., Vincent, *supra* note 7, at 175. It is important to note, however, that the actual existence of such a competitiveness effect is a matter of considerable debate and is generally believed to be overstated. *But cf.* Pauwelyn, *supra* note 13, at 453-54 (the existence of competitiveness effect is debatable and generally believed to be overstated); Ludvine Tamiotti, *The Legal Interface Between Carbon Border Measures and Trade Rules*, 11 CLIMATE POL’Y 1202, 1207-08 (2011); CTR. FOR INT’L ENVTL. LAW & FRIENDS OF THE EARTH EUROPE, IS WORLD TRADE LAW A BARRIER TO SAVING OUR CLIMATE? 106 (2009), available at http://files.ali-cle.org/files/coursebooks/pdf/CR033_chapter_08.pdf [hereinafter CIEL & FOEE REPORT].

54. See, e.g., Robert A. HOPPE, PENNI KORB, ERIK J. O’DONOGHUE & DAVID E. BANKER, STRUCTURE AND FINANCES OF U.S. FARMS: FAMILY FARM REPORT (2007), available at <http://www.ers.usda.gov/publications/eib-economic-information-bulletin/eib24.aspx#.U1VHJVfRXCo> (assessing the status of family farms in the United States).

55. See, e.g., Stacey Willemsen Person, *International Trade: Pushing United States Agriculture Toward a Greener Future*, 17 GEO. INT’L ENVTL. L. REV. 307, 313 (2004).

56. See Blandford, Boisvert & Fulponi, *supra* note 51, at 671; Kendall, *supra* note 8, at 67-68.

57. See, e.g., Blandford, *supra* note 12, at 7.

58. JEROME DUMORTIER ET AL., MODELING THE EFFECTS OF PASTURE EXPANSION ON EMISSIONS FROM LAND-USE CHANGE (2010), available at https://www.uni-hohenheim.de/fileadmin/einrichtungen/iatrc2010/Papers/Dumortier_et_al_IATRC_Summer_2010.pdf.

59. Key & Tallard, *supra* note 47, at 393.

60. *Id.*

61. H.R. 2454, 111th Cong. (2009).

Congress is informed by the President that border measures are not in the 'national economic interest' and such a presidential declaration is formally approved by the Congress."⁶² At the time, a number of policymakers, commentators, and trade partners raised concerns about trade law implications, and President Obama expressed his preference for alternative approaches.⁶³ U.S. obligations under WTO law and the potential to design a tax that addresses these considerations are discussed in the next section.

II. TRADE LAW IMPLICATIONS OF A UNILATERAL TAX ON MEAT

"[A]n inter-governmental organization with [159] Member States[,]" the World Trade Organization "administers a comprehensive set of international agreements covering a wide array of aspects relating to international trade" and promulgates rules to which, "[a]s Members to the WTO, States accept to be bound."⁶⁴ While WTO law does not specifically place limitations on measures that members can implement to address climate change and other environmental issues, WTO agreements "might nevertheless come into play as soon as national policies influence economic behavior of economic actors like manufacturers, industry sectors or consumers in a way that affects trade flows."⁶⁵ As a result, nongovernmental organizations have raised concerns that WTO and trade law obligations generally interfere with a nation's ability to implement policies to protect the environment and reverse past environmental damage.⁶⁶ They often point to several high-profile cases that reflect these concerns.⁶⁷ As a result,

62. DHAR & DAS, *supra* note 16, at 55.

63. *House Version of US Climate Bill Strengthens Likelihood of Border Measures*, INT'L CTR. FOR TRADE & SUSTAINABLE DEV. (June 26, 2009), <http://www.ictsd.org/bridges-news/biores/news/house-version-of-us-climate-bill-strengthens-likelihood-of-border-measures.>; *Obama Criticises Border Tax Adjustments in House Climate Bill*, INT'L CTR. FOR TRADE & SUSTAINABLE DEV. (July 1, 2019), www.ictsd.org/bridges-news/bridges/news/obama-criticises-border-tax-adjustments-in-house-climate-bill.

64. CIEL & FOEE REPORT, *supra* note 53, at 90.

65. *Id.*

66. *See, e.g., Top Reasons to Oppose the WTO*, GLOBAL EXCHANGE <http://www.globalexchange.org/resources/wto/oppose> (last visited Oct. 21, 2014); *WTO and Environment, Health & Safety*, PUBLIC CITIZEN <https://www.citizen.org/trade/wto/ENVIRONMENT/> (last visited Feb. 18, 2015); *Why Is the WTO a Problem?*, GREENPEACE INT'L <http://www.greenpeace.org/international/en/campaigns/trade-and-the-environment/why-is-the-wto-a-problem/> (last visited Feb. 18, 2015); FRIENDS OF THE EARTH INT'L, *WTO: HANDS OFF OUR NATURAL ENVIRONMENT* (2005), available at <https://www.foeurope.org/sites/default/files/publications/wtohandsoff.pdf>.

67. *See, e.g., Panel Report, United States—Standards for Reformulated and Conventional Gasoline*, WT/DS2/R, 6.37 (Jan. 29, 1996); Appellate Body Report, *United States—Standards for Reformulated and Conventional Gasoline*, WT/DS2/AB/R (Apr. 29, 1996) [hereinafter *U.S.—Gasoline*] (invalidating U.S. law on reformulated gasoline as discriminatory against imports); Appellate Body Report, *United States—Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R (Oct. 12, 1998) [hereinafter *Shrimp-Turtle I*] (invalidating U.S. prohibition on shrimp imports from boats not using turtle excluder devices); Appellate Body Report, *United States—Measures Concerning the Importation, Marketing and Sale of Tuna and Tuna Products*, WT/DS381/AB/R (June 13, 2012) [hereinafter *Tuna-Dolphin III*] (invalidating U.S. requirements for dolphin-safe labels); Appellate Body Report, *Canada—Certain Measures Affecting the Renewable Energy Generation Sector*, WT/DS412/AB/R (May 6, 2013) (invalidating portions of Canada's renewable

environmentalists tend to be wary of trade law obligations and doubt the ability of lawmakers to pass strong environmental laws that comply with WTO law.

In theory, however, this need not be the case. The purpose of the WTO is to conduct trade

with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income and effective demand, and expanding the production of and trade in goods and services, while allowing for the optimal use of the world's resources *in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development.*⁶⁸

As Pauwelyn notes, the WTO treaty recognizes “legitimate interests *justifying trade restrictions* (leading to WTO rights to restrict trade),” and it recognizes that obligations to liberalize trade “cannot systematically prevail over the rights of WTO members to restrict trade.”⁶⁹ Therefore, WTO law may actually provide a basis for environmental protections.

Consequently, WTO panels should consider the bigger picture when evaluating environmental provisions in WTO disputes.⁷⁰ Some commentators, however, have noted that panels tend not to evaluate disputes from this broader perspective.⁷¹ Nevertheless, environmental provisions, particularly those intended to address critical global problems such as climate change, need not necessarily run afoul of WTO obligations.

While WTO case law does not have any official precedential value, General Agreement on Tariffs and Trade (“GATT”) opinions issued both before and after the creation of the WTO provide the best indication of how present and future WTO panels will likely rule.⁷² WTO panels and the Appellate Body avoid issuing decisions that conflict with previous ones without good reason.⁷³ It is important to remember, however, that these decisions do not formally bind panels. Fundamental global issues such as climate change may impact the way that WTO panels rule and see their role.

energy law).

68. Marrakesh Agreement Establishing the World Trade Organization, Apr. 15, 1994, 1867 U.N.T.S. 154 [hereinafter Marrakesh Agreement] (emphasis added).

69. JOOST PAUWELYN, CONFLICT OF NORMS IN PUBLIC INTERNATIONAL LAW: HOW WTO LAW RELATES TO OTHER RULES OF INTERNATIONAL LAW 198 (2003).

70. See CIEL & FOEE REPORT, *supra* note 53, at 90.

71. See, e.g., Kendall, *supra* note 8, at 77.

72. See, e.g., Johan Westberg, The WTO Permissibility of Border Trade Measures in Climate Change Mitigation 12 (2010) (Masters thesis, University of Lund), available at <http://www.tradeandenvironmentnexus.com/wp-content/uploads/2011/12/The-WTO-permissibility-of-border-trade-measures-in-climate-change-mitigation.pdf>; DHAR & DAS, *supra* note 16, at 7.

73. DHAR & DAS, *supra* note 16, at 7.

This section looks at how WTO panels would likely view a BTA for a GHG emissions tax on meat. While the WTO permits BTAs, the manner in which a member nation implements a BTA can raise trade law concerns. Section A lays out the relevant WTO obligations, focusing first on WTO provisions dealing with BTAs on imports or exports. Section B addresses other core GATT provisions and discusses whether a BTA for a tax on the GHG emissions of meat could comply with these requirements. Finally, section C focuses on exceptions to those provisions and details how a noncompliant measure may still survive if deemed necessary to protect humans, animals or plants or to preserve natural resources.

A. WTO LAW AND IMPLICATIONS FOR A BORDER TAX ADJUSTMENT

The WTO aims to liberalize trade and is concerned with provisions that unduly restrict trade.⁷⁴ The more significantly a measure impacts trade, the more likely it is to violate WTO law. As a general matter, WTO law does not prohibit fees on imported goods. Article XI of the GATT, for example, prohibits other restrictions on trade besides “duties, taxes, and other charges,” making clear that taxes and fees are preferable to other measures.⁷⁵ Other measures that have been suggested and implemented to address climate change, such as restrictions or anti-dumping duties on imports from freeriding countries, raise potentially significantly greater trade law issues than a tax.⁷⁶ Basically, a BTA “consists of imposing . . . taxes on imports at the domestic rate in order to maintain competitiveness domestically while relieving exports of taxation, allowing them to compete untaxed in international markets.”⁷⁷

In order for imported goods to qualify for a BTA, the tax must be equivalent to a tax on similar domestic products so as not to qualify as a customs duty.⁷⁸ Article II of GATT generally prohibits duties on imports outside of the established and agreed-upon tariff schedule.⁷⁹ On the other hand, it does permit parties to impose “a charge equivalent to an internal tax . . . in respect of the *like* domestic product.”⁸⁰ In determining whether a BTA complies with WTO law, panels will consider whether the tax is direct or indirect and whether the tax constitutes a subsidy. Each of these issues is analyzed below.

The WTO would examine “whether carbon taxes are direct or indirect taxes.”⁸¹ A GATT Working Party on BTAs in 1970 indicated that the rebate of indirect

74. See WORLD TRADE ORG., UNDERSTANDING THE WTO (2011), available at http://www.wto.org/english/thewto_e/whatis_e/tif_e/understanding_e.pdf.

75. General Agreement on Tariffs and Trade, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194 [hereinafter GATT].

76. See, e.g., Pauwelyn, *supra* note 13, at 465-73.

77. Vincent, *supra* note 7, at 176.

78. See Tamiotti, *supra* note 53, at 1204.

79. GATT, *supra* note 75, art. II.

80. *Id.*

81. Tamiotti, *supra* note 53, at 1204.

taxes—defined as taxes on products—was permitted.⁸² Conversely, the rebate of direct taxes, defined as taxes on the producers, such as social security and payroll taxes, is prohibited.⁸³ This interpretation was later confirmed in *United States Tax Legislation*.⁸⁴

Whether a GHG emissions tax is direct or indirect is a matter of considerable debate. Certain experts have expounded that taxes on GHG emissions are definitively not eligible for BTAs as they constitute direct taxes on producers.⁸⁵ Other experts, however, contend that nations can impose such a tax.⁸⁶ The WTO, in a report co-written with the United Nations Environment Programme, indicated that its rules might allow for BTAs in this situation.⁸⁷

According to Jennifer Hillman, a former WTO Appellate Body member, it is important that lawmakers focus on the GHG emissions of the product, rather than on the producers, when designing a BTA. “While the amount of the tax would reflect the amount of carbon dioxide emitted during the production of the product, because it would be assessed on the product itself, the tax should be considered an indirect tax fully eligible for border adjustment for imports.”⁸⁸ That would make the tax less suspect under WTO law.

Much of this issue relates to the extent to which WTO law permits BTAs based on the production methods of products. The 1970 GATT Working Party identified this as an open question, specifically noting that the status of taxes on inputs on the final product, and, particularly on energy taxes, was unclear.⁸⁹ Nevertheless, the Working Party did not attempt to clarify the issue. In 1997, the WTO Committee on Trade and the Environment (“CTE”) noted this uncertainty.⁹⁰ The CTE indicated that it believed certain taxes on process and production methods (“PPMs”) could qualify as indirect taxes and thereby be eligible for BTAs.⁹¹

82. Working Party, *Border Tax Adjustments*, ¶ 18, L/3464 (Dec. 2, 1970), GATT B.I.S.D. (18th Supp.) at 97. [hereinafter Working Party].

83. *Id.*

84. Report of the Panel, *United States—Tax Legislation*, L/4422 (Nov. 12, 1976), GATT B.I.S.D. (23rd Supp.) at 98; *see also* Tamiotti, *supra* note 53, at 1204.

85. *See, e.g.*, CHRIS WOLD, SANFORD E. GAINES & GREG BLOCK, *TRADE AND THE ENVIRONMENT: LAW AND POLICY* 239-40 (2011).

86. *See, e.g.*, Kendall, *supra* note 8; HOERNER & MULLER, *supra* note 16; Pauwelyn, *supra* note 13.

87. *See* UNITED NATIONS ENV'T PROGRAMME & WORLD TRADE ORG., *TRADE AND CLIMATE CHANGE: WTO-UNEP REPORT* (2009), available at http://www.wto.org/english/res_e/booksp_e/trade_climate_change_e.pdf [hereinafter WTO-UNEP REPORT]; *see also* Tamiotti, *supra* note 53 (examining the possibility of a border carbon adjustment).

88. JENNIFER HILLMAN, *CHANGING CLIMATE FOR CARBON TAXES: WHO'S AFRAID OF THE WTO* 6 (2013), available at http://www.gmfus.org/wp-content/blogs.dir/1/files_mf/1374767060Hillman_CarbonTaxes_Jun13_web.pdf (internal citations omitted).

89. Working Party, *supra* note 82, at 15.

90. World Trade Org. Comm. on Trade & Env't, *Taxes and Charges for Environmental Purposes—Border Tax Adjustments*, WT/CTE/W/47 (May 2, 1997), at 66.

91. *Id.* at 70.

However, the CTE did not resolve the issue.⁹² On the other hand, according to Andrew Hoerner and Frank Muller, GATT negotiators intended “that process as well as product charges be border adjustable.”⁹³

Many commentators have looked to the *Superfund* case as a helpful indicator of the WTO’s thinking in this regard.⁹⁴ In *Superfund*, U.S. trade partners challenged a U.S. scheme to impose a fee on imported products based on the chemicals used in their production.⁹⁵ The United States designed the fee to be comparable to a tax that would have been imposed had the items been produced domestically.⁹⁶ A GATT panel determined that the United States could permissibly impose a tax for chemicals used in producing the product,⁹⁷ but the panel did not address PPMs that are not actually incorporated into the final product, such as GHGs emitted during production.⁹⁸ Pauwelyn explains the ongoing uncertainty as to “whether a tax on inputs (such as energy) which are *not* physically incorporated into the final product (such as a tax on carbon emitted in, say, China but not, of course, physically present in the steel imported into the United States) can be adjusted at the border.”⁹⁹ While there seems to be some flexibility to design a BTA that will comply with these requirements, it remains an open question.

Additionally, policymakers must examine whether the “rebate constitutes an illegal subsidy.”¹⁰⁰ Other provisions of WTO law strictly limit subsidies as trade-distorting. Government subsidies interfere with free trade and distort international markets because they allow producers of subsidized products to sell them below the cost of production, thereby outpricing competitors.¹⁰¹ GATT Article VI strictly constrains “dumping” where “products of one country are introduced into the commerce of another country at less than the normal value of the products.”¹⁰² Additionally, Article XVI strictly limits the use of export subsidies.¹⁰³ Importantly, a note to Article XVI states that “[t]he exemption of an exported product from duties or taxes borne by the like product when destined for domestic consumption, or the remission of such duties or taxes in amounts not in

92. *Id.*

93. HOERNER & MULLER, *supra* note 16, at 27.

94. *See, e.g.*, Vincent, *supra* note 7, at 182; Kendall, *supra* note 8; DHAR & DAS, *SUPRA* NOTE 16; WTO-UNEP REPORT, *supra* note 87; Pauwelyn, *supra* note 13.

95. *See generally* Report of the Panel, *United States—Taxes on Petroleum and Certain Imported Substances*, L/6175 (June 5, 1987), GATT B.I.S.D. (34th Supp.) at 163 (1988).

96. *Id.* ¶ 2.5.

97. *Id.* ¶ 5.2.10.

98. Pauwelyn, *supra* note 13, at 479.

99. *Id.* at 478.

100. Kendall, *supra* note 8, at 79; *see also* Tamiotti, *supra* note 53, at 1204.

101. *See* Person, *supra* note 55, at 308.

102. GATT, *supra* note 75, art. VI.

103. *See id.* art. XVI.

excess of those which have accrued, shall not be deemed to be a subsidy.”¹⁰⁴ Therefore, it seems likely that a WTO panel would not consider the rebate of a GHG emissions tax a subsidy under Article XVI.

The Agreement on Subsidies and Countervailing Measures (“SCM Agreement”) also places strict limits on subsidies.¹⁰⁵ The SCM Agreement prohibits BTAs on exports with respect to direct taxes.¹⁰⁶ On the other hand, the SCM Agreement only prohibits BTAs for indirect taxes that are “in excess” of taxes “levied in respect of the production and distribution of like products when sold for domestic consumption.”¹⁰⁷ Accordingly, the issue of whether carbon taxes are direct or indirect taxes, as explored above, remains the determinative issue. With the matter unsettled,¹⁰⁸ Hoerner and Muller have argued that rebates on exports for carbon taxes clearly do not violate these provisions.¹⁰⁹ Moreover, the Agreement on Agriculture permits additional subsidies for agricultural products if they do not distort trade.¹¹⁰ Given this backdrop, it seems unlikely that a WTO panel would find a rebate of GHG emission taxes charged to domestic animal agriculture businesses an unlawful subsidy. Nevertheless, U.S. lawmakers would need to consider the BTA and how it fits within the existing subsidy system carefully. As explored in further detail below, the United States currently provides substantial subsidies to the animal agriculture industry. Determining where a GHG emissions tax on meat fits with these subsidy programs will be important in designing a tax that does not violate WTO law.

A number of these questions remain unanswered. However, nations must be able to enact measures that they consider necessary to the protection of their residents and supported by scientific and economic evidence. Uncertainty regarding WTO law should not interfere with such objectives. Nevertheless, designing a BTA in this instance faces additional WTO hurdles as explored below.

B. CORE GATT PROVISIONS AND CONSEQUENCES FOR A BTA

Even if the WTO finds that the measure complies with the requirements for BTAs noted above, the United States must implement the tax in a nondiscriminatory way. In other words, the United States cannot tax imported products differently than “like” goods produced domestically or by other WTO members. The specific requirements of Articles I and III and how they may implicate a BTA for a GHG emissions tax on meat are explored below.

104. *Id.* art. XVI, note 1.

105. Agreement on Subsidies and Countervailing Measures (Apr. 15, 1994), Marrakesh Agreement, Annex 1A.

106. *Id.* Annex 1(e).

107. *Id.* Annex 1(g); *see also* Tamiotti, *supra* note 53, at 1204.

108. *See, e.g.,* Kendall, *supra* note 8, at 81-82.

109. HOERNER & MULLER, *supra* note 16, at 21, 32.

110. *See* Agreement on Agriculture (Apr. 15, 1994), Marrakesh Agreement, Annex 1A.

Article I of the GATT prohibits parties from providing favorable trading conditions to one party to the WTO that they do not provide to other parties.¹¹¹ This concept is referred to as “most-favored nation” (“MFN”) treatment.¹¹² Article III of the GATT imposes similar obligations as to domestic products and is referred to as the national treatment obligation.¹¹³ Therefore, under each of these obligations, the core issue is whether products are taxed differently than “like” foreign or domestic products.

These obligations may implicate a GHG emission tax in two ways. First, the United States may wish to impose the tax only on nations that do not have similar taxes in place so as to address the emissions leakage issues addressed above. That manner of imposition will almost certainly violate MFN,¹¹⁴ although the Article XX exceptions discussed below may permit or even require it. Additionally, implementing the tax in the most effective way so as to tax meat based on its specific GHG emissions would mean that Congress would tax meat from different parts of the world at quite varied rates; different geographic areas produce meat, particularly beef, differently. Some methods are much more climate-intensive than others.¹¹⁵

Specifically, “[t]he developing world contributes 75% of global GHG emissions from ruminants and 56% of emissions from” nonruminants.¹¹⁶ Beef from Latin America, for example, is particularly climate-intensive, both because of the way it is produced and because meat producers cut down tropical rain forests so that animals can graze or farmers can raise crops to feed them.¹¹⁷ Because “South American cattle meat production is completely dominated by extensive, grazing-based systems, . . . intensive feedlot systems are rare.”¹¹⁸ Grazing-based systems release significantly more methane and nitrous oxide than concentrated systems,

111. GATT, *supra* note 75, art. I (“With respect to customs duties and charges of any kind imposed on or in connection with importation or exportation or imposed on the international transfer of payments for imports or exports, . . . any advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the *like product* originating in or destined for the territories of all other contracting parties.”) (emphasis added).

112. UNDERSTANDING THE WTO, *supra* note 74, at 34.

113. GATT, *supra* note 75, art. III (“The contracting parties recognize that internal taxes and other internal charges . . . should not be applied to imported or domestic products so as to afford protection to domestic production. The products of the territory of any contracting party imported into the territory of any other contracting party shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied, directly or indirectly, to *like domestic products*.”) (emphasis added)).

114. *See, e.g.*, HILLMAN, *supra* note 88, at 12; Pauwelyn, *supra* note 13, at 495.

115. *See* Tubiello et al., *supra* note 26, at 8.

116. Herrero et al., *supra* note 4, at 20890.

117. *See, e.g.*, David Cassuto & Sarah Saville, *Hot, Crowded, and Legal: A Look at Industrial Agriculture in the United States and Brazil*, 18 ANIMAL L. 185, 15-16 (2012); D. P. M. Zaks et al., *Producer and Consumer Responsibility for Greenhouse Gas Emissions from Agricultural Production—A Perspective from the Brazilian Amazon*, 4 ENVTL. RESEARCH LETTERS 1, 4 (2009).

118. Wirsenius, Hedenus, & Mohlin, *supra* note 5, at 180.

which are more common in the United States and Europe.¹¹⁹ According to researchers, “total GHG emissions per unit of meat produced far exceeds those in the EU, by as much as a factor of five.”¹²⁰

Brazil, in particular, is a major meat exporter whose methods of production and significant amounts of land used to grow soy to feed animals are particularly climate-intensive.¹²¹ Not taking into account land use changes (which are significant), Brazilian beef emits thirty to forty percent more GHGs than beef produced in Europe.¹²² The extent to which legislators consider transportation emissions would further impact the tax on products traveling from afar. While the United States would not likely expressly design a tax based on national origin, the implementation of the tax could nevertheless raise MFN and national treatment concerns. The question would then become whether products with significantly different GHG emissions are nevertheless “like.”

GATT and WTO panels have extensively deliberated the factors that make two products “like” or not “like”. The first GATT case to deal with the issue of like products was *Japan-Alcoholic Beverages I*.¹²³ The European Communities, Canada, and the United States accused Japan of violating Article III by charging lower taxes on shōchū—a domestically produced alcohol made from rice—than on imported products such as vodka and whiskey.¹²⁴ The panel critically evaluated the likeness of various products. Focusing primarily on physical characteristics and end uses, the panel concluded that (1) shōchū and other clear distilled beverages were like products, and (2) shōchū and all alcoholic beverages were “directly competitive or substitutable products.”¹²⁵ The panel found arguments regarding consumer preferences unavailing, particularly because a tax can impact such preferences.¹²⁶

Over time, GATT panels developed what became known as the “aims and effects test” in assessing the validity of a measure.¹²⁷ Under this test, panels considered the purpose of a measure and its impact in assessing the likeness of products and subsequent validity of the law or regulation.¹²⁸ As a panel stated in *U.S. Alcohol*, Article III intends “not to prevent contracting parties from using

119. *Id.* While, as the authors note, intensive feedlot systems (CAFOs) emit fewer GHG emissions, they do have significant other issues related to the environment, animal welfare, and public health, some of which are discussed in Part II.

120. *Id.*

121. See, e.g., Zaks et al., *supra* note 117, at 2, 4; Cassuto & Saville, *supra* note 117.

122. See Lerner et al., *supra* note 23, at 675.

123. See Report of the Panel, *Japan—Customs Duties, Taxes and Labelling Practices on Imported Wines and Alcoholic Beverages*, L/6216 (Nov. 10, 1987), GATT B.I.S.D. (34th Supp.) at 83 (1988).

124. *Id.*

125. *Id.* ¶¶ 5.6, 5.7.

126. *Id.* ¶ 5.7.

127. See generally Robert E. Hudec, *GATT/WTO Constraints on National Regulation: Requiem for an “Aim and Effects” Test*, 32 INT’L LAW. 619, 626-27 (1998).

128. See *id.*

their fiscal and regulatory powers for purposes other than to afford protection to domestic production, . . . [nor] to prevent contracting parties from differentiating between different product categories for policy purposes unrelated to the protection of domestic production.”¹²⁹ Rather, in assessing the validity of a measure, “it is necessary to consider whether such product differentiation is being made ‘so as to afford protection to domestic production.’”¹³⁰ A subsequent GATT panel applied this analysis to uphold a tax on imported vehicles in *U.S.—Taxes on Automobiles*.¹³¹ In that case, the European Communities challenged a U.S. law that charged higher taxes for so-called “gas guzzlers” than for other cars.¹³² The panel found that cars with different fuel economy were not “like” and could be taxed differently.¹³³

However, the WTO Appellate Body subsequently rejected the aims and effects test, finding that the motivation underlying a measure should not be taken into consideration in assessing whether products are like.¹³⁴ This could increase the difficulty in showing that two products are dissimilar.¹³⁵ For example, meat from different countries could be considered like despite the lack of a protectionist motivation behind the measure. WTO panels have considered a number of factors when determining whether products are “like,” including, but not limited to:

- (a) [the] product’s properties, nature and quality, i.e. the physical properties of the products;
- (b) the product’s end-uses in a given market, i.e. the extent to which the products are capable of serving the same or similar end-uses;
- (c) the international classification of the products for tariff purposes; [and]
- (d) consumers’ tastes and habits, i.e. the extent to which consumers perceive and treat the products as alternative means of performing particular functions in order to satisfy a particular want or demand.¹³⁶

Consumer preferences may be particularly important in attempting to deal with an issue as significant as climate change. In *EC-Asbestos*, for example, France banned the import of asbestos because of its detrimental impact on human health.¹³⁷ When Canada challenged the law before the WTO, the Appellate Body

129. Report of the Panel, *United States—Measures Affecting Alcoholic and Malt Beverages*, ¶ 5.25, DS23/R (Mar. 16, 1992), GATT B.I.S.D. (39th Supp.) at 206 (1992).

130. *Id.*

131. Report of the Panel, *United States—Taxes on Automobiles*, ¶ 5.11, DS31/R (Sept. 29, 1994).

132. *Id.* ¶ 3.106.

133. *Id.* ¶ 5.15.

134. Hudec, *supra* note 127; Appellate Body Report, *Japan—Taxes on Alcoholic Beverages*, WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R (Nov. 1, 1996); Appellate Body Report, *European Communities—Regime for the Importation, Sale and Distribution of Bananas*, WT/DS27/AB/R (Sept. 25, 1997).

135. See generally Mark Liang, *Green Taxes and the WTO: Creating Certainty for the Future*, 10 CHI. J. INT’L L. 359 (2009).

136. DHAR & DAS, *supra* note 16, at 19.

137. Appellate Body Report, *European Communities—Measures Affecting Asbestos and Asbestos-Containing Products*, ¶ 2, WT/DS135/AB/R (Apr. 5, 2001) [hereinafter *EC—Asbestos*].

rejected Canada's contention that asbestos was "like" other products utilized for the same purposes.¹³⁸ The Appellate Body focused in part on consumer concerns regarding the health impact of exposure to asbestos.¹³⁹ In the wake of *EC-Asbestos*, some commentators have suggested that the WTO Appellate Body could be reinvigorating a version of the aims and effects test.¹⁴⁰ The case provides a basis for individual concerns to be taken into consideration in assessing likeness.

While consumers may not necessarily be as concerned about the climate change implications of animal agriculture as they are about asbestos exposure, for example, such considerations are nonetheless relevant. Other commentators have noted that one way to determine whether or not products are "like" is to evaluate whether they serve different markets, such as organic versus conventional vegetables.¹⁴¹ U.S. consumers have become more concerned about environmental, public health, and animal welfare impacts, including the climate change implications, of their food choices. There is a concerted movement to boycott meat from concentrated animal feeding operations ("CAFOs"), for example.¹⁴² Moreover, consumers have created the locavore movement to address the climate change implications of food choices by refusing to purchase food that has travelled a long distance to reach the consumer.¹⁴³ To the extent that the WTO panel considers such preferences, they may strengthen the argument that the GHG emissions of foods impact whether or not they are "like."

However, if the United States bases a tax on the environmental impact of meat without addressing some of these other issues, other nations may complain that the policy singles out their products. As noted above, Latin American beef is particularly climate-intensive; however, that is because Latin American meat

138. *Id.* ¶ 147.

139. *See id.* ¶ 92.

140. *See* Amelia Porges & Joel Trachtman, *Robert Hudec and Domestic Regulation: The Resurrection of Aim and Effects*, 37 J. WORLD TRADE 783, 784 (2003); *see also* Nicholas A. DiMascio & Joost Pauwelyn, *Non-Discrimination in Trade and Investment Treaties: Worlds Apart or Two Sides of the Same Coin?*, 102 AM. J. INT'L L. 48, 65 (2008).

141. Kendall, *supra* note 8, at 79.

142. *See generally* DANIEL IMHOFF, *CAFO: THE TRAGEDY OF INDUSTRIAL ANIMAL FACTORIES* (Daniel Imhoff ed. 2010) (discussing the overall problems with CAFOs); DOUG GURIAN-SHERMAN, *CAFOs UNCOVERED: THE UNTOLD COSTS OF CONFINED ANIMAL FEEDING OPERATIONS* 42-56 (2008), http://vegetarian.procon.org/sourcefiles/cafos_uncovered.pdf (last visited Feb. 18, 2015); Paul Fassa, *Factory Farms: Bad for Farm Animals and Human Consumers*, NAT. SOC'Y (Apr. 9, 2013 4:00 AM), <http://naturalsociety.com/factory-farms-bad-farm-animals-humans/>.

143. *See* Sarah DeWeerd, *Is Local Food Better?*, 22 WORLD WATCH MAGAZINE, May-June 2009, available at <http://www.worldwatch.org/node/6064> (last visited Feb. 18, 2015). It is important to note that the actual contribution of transportation to climate change is a matter of debate, and particularly with animal agriculture, the contribution of transportation to the overall carbon footprint is considered minimal. *See also* Daniel Imhoff, *Vote with Your Fork: It's Time for Citizens to Take Back the Food System*, in *CAFO: THE TRAGEDY OF INDUSTRIAL ANIMAL FACTORIES* 299, 301-02 (Daniel Imhoff, ed. 2010); M. Berners-Lee et al., *supra* note 4, at 186. However, the existence of the movement is an indication of consumers' willingness to make purchasing decision based on GHG emissions.

producers do not raise animals in CAFOs.¹⁴⁴ Failure to establish a holistic policy that addresses issues of public health and animal welfare as well as GHG emissions could raise questions about the legitimacy of the policy.

Another major concern regarding GHG emission tax BTAs relates to WTO treatment of attempts to differentiate products based on PPMs.¹⁴⁵ GATT panel decisions in *Tuna-Dolphin I/II* provide the primary background to this concern.¹⁴⁶ For fear that the methods used to catch tuna were harming and killing dolphins, particularly in the Eastern Tropical Pacific (“ETP”), the United States banned imported tuna caught in the ETP using purse-seine nets.¹⁴⁷ Mexico challenged the law for violating U.S. trade obligations under GATT.¹⁴⁸ The United States attempted to justify its law in part by arguing that tuna caught with the use of purse-seine nets were unlike tuna caught via more dolphin-friendly means.¹⁴⁹ However, the panel found that because the product—tuna—was identical in both cases, the United States could not differentiate between the products based on PPMs.¹⁵⁰ The environmental community heavily criticized these decisions for severely limiting the environmental measures that nations can adopt to limit imports.¹⁵¹

While these decisions seem to challenge advocates who argue that seemingly identical products are not “like,” as Pauwelyn has noted, “these panels were never adopted and . . . WTO thinking on the issue of border adjustment has evolved.”¹⁵² Subsequent cases, and particularly the WTO Appellate Body’s decisions in *Shrimp-Turtle I* and *II*,¹⁵³ suggest that the analysis is much more nuanced. In those cases, the United States passed a law prohibiting the importation of shrimp unless it was caught using a turtle excluder device designed to avoid injuring or killing endangered sea turtles.¹⁵⁴ While the Appellate Body held the law and its implementation violated the United States’ obligations under GATT, it did not object to the use of PPMs to differentiate between products.¹⁵⁵

Moreover, Hillman has expressed doubt that the “like” product requirements would pose difficulties for imposing a GHG emissions tax:

144. Wirsenius, Hedenus & Mohlin, *supra* note 5, at 180.

145. *See, e.g.*, Vincent, *supra* note 7, at 182-83.

146. Report of the Panel, *United States—Restrictions of Imports of Tuna*, DS21/R (Sept. 3, 1991), GATT B.I.S.D. (39th Supp.) at 155 (1993) [hereinafter *Tuna-Dolphin I*]; Report of the Panel *United States—Restrictions on Imports of Tuna*, DS29/R (June 16, 1994).

147. *Tuna-Dolphin I*, *supra* note 146, ¶ 2.7.

148. *Id.* ¶ 3.1.

149. *Id.* ¶¶ 3.20-3.21.

150. *Id.* ¶¶ 5.10-5.16.

151. *See, e.g.*, John H. Knox, *The Judicial Resolution of Conflicts Between Trade and the Environment*, 28 HARV. ENVTL. L. REV. 1, 5-11 (2004) (discussing the “infamous” nature of the *Tuna-Dolphin* decision).

152. Pauwelyn, *supra* note 13, at 483.

153. *See, e.g.*, Robert Howse, *The Appellate Body Rulings in the Shrimp/Turtle Case: A New Legal Baseline for the Trade and Environment Debate*, 27 COLUM. J. ENVTL. L. 491, 494 (2002).

154. *Shrimp-Turtle I*, *supra* note 67.

155. *Id.*

[M]ost WTO decisions that have found taxation systems to run afoul of the WTO's non-discrimination rules have been based on different tax rates applied to products that have been claimed to be different (e.g., Japanese sochu versus vodka) based on a particular definition of the product. Once the WTO determined, for example, that sochu and vodka were "like" products, the lower tax on sochu (which was domestically produced) resulted in discrimination against the higher-taxed, imported vodka. Here, however, the carbon tax and the corresponding BTA would presumably be the same regardless of the definition of the product—\$20 for every ton of carbon dioxide emitted in its production.¹⁵⁶

According to Hillman, "[t]he best system" for assessing the amount of the tax "and one that would not likely raise WTO concerns would determine the carbon content of both domestically-produced and imported products on a product- and plant-specific basis."¹⁵⁷

However, that also complicates administration of the tax, which may make it less attractive to policymakers. Alternatively, legislators could impose the tax based on the average GHG emissions of a particular type of product (i.e. beef, chicken, pork), or the GHG emissions had the item been produced in the United States.¹⁵⁸ "Although the variations in emission levels between individual producers within a food category are significant, they are in general much smaller than the differences between food categories."¹⁵⁹ These alternatives potentially raise more trade law implications because products would not be taxed based on their actual GHG emissions and also would be less effective in targeting and reducing GHG emissions. However, administration of the tax would be simpler.¹⁶⁰

Policymakers and advocates would need to evaluate all of these considerations in designing a tax and BTA that would withstand WTO scrutiny and best achieve the goals. The validity of such a tax remains uncertain under WTO law. Even if the WTO panel finds the tax violates core GATT provisions, it still may pass muster if it qualifies for an exception. The GATT exceptions and how this proposal would likely fare under them are discussed below.

C. A BTA MIGHT QUALIFY UNDER THE GATT EXCEPTIONS TO PROTECT THE ENVIRONMENT

Article XX of the GATT contains exceptions to its requirements. The exceptions that the United States would most likely use to defend the BTA are those in subsection (b), allowing measures that are "necessary to protect human, animal or plant life or health," and subsection (g), permitting measures "relating to the

156. HILLMAN, *supra* note 88, at 9.

157. *Id.* at 7.

158. *See generally id.*; DHAR & DAS, *supra* note 16, at 22.

159. Wirsenius, Hedenus & Mohlin, *supra* note 5, at 164.

160. *See* HILLMAN, *supra* note 88.

conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption.”¹⁶¹

While efforts to address climate change could fall within the Article XX(b) exception, the WTO member seeking to enforce the measure must also show that the provision is necessary to achieve the goals.¹⁶² Because the purpose of the BTA would be multifaceted, including addressing competitiveness concerns of local industry, other commentators have noted that the WTO would likely find such a provision to be unnecessary under Article XX.¹⁶³ However, the WTO has not necessarily interpreted the provision so strictly.

In *Korea-Various Measures on Beef*, the Appellate Body made clear that nations may be able to justify measures as necessary even when other possible measures exist and/or the measure is not entirely indispensable to achievement to the relevant objectives:

A measure with a relatively slight impact upon imported products might more easily be considered as “necessary” than a measure with intense or broader restrictive effects. . . . [D]etermination of whether a measure, which is not “indispensable,” may nevertheless be “necessary[,]” . . . involves in every case a process of weighing and balancing a series of factors which prominently include the contribution made by the compliance measure to the enforcement of the law or regulation at issue, the importance of the common interests or values protected by that law or regulation, and the accompanying impact of the law or regulation on imports or exports.¹⁶⁴

Therefore, the panel typically engages in a process of “weighing and balancing” to determine the necessity of the provision. Given the importance of addressing climate change and the limited trade implications of a BTA, the weighing and balancing process potentially works well for a tax based on GHG emissions.

Panels have given WTO members significant leeway in determining for themselves whether a measure is necessary given the needs and limitations of a particular population and governing structure. In *Brazil-Retreaded Tyres*, for example, Brazil attempted to justify its ban on retreaded tire imports as necessary to reduce the number of waste tires in the country, contributing to potential and actual human health effects.¹⁶⁵ While the Appellate Body ultimately rejected Brazil’s arguments on other bases, it did agree with Brazil and the WTO panel

161. GATT, *supra* note 75, art. XX.

162. *Id.*

163. See Gates, *supra* note 16; Bradley J. Condon, *Climate Change and Unresolved Issues in WTO Law*, 12 J. INT’L ECON. L. 895, 925 (2009).

164. Appellate Body Report, *Korea—Measures Affecting Imports of Fresh, Chilled and Frozen Beef*, ¶¶ 163-64, WT/DS161/AB/R, WT/DS169/AB/R (Dec. 11, 2001).

165. Appellate Body Report, *Brazil—Measures Affecting Imports of Retreaded Tyres*, ¶ 57, WT/DS332/AB/R (Dec. 3, 2007).

that the measure was necessary under Article XX(b).¹⁶⁶ Specifically, the Appellate Body found that the ban was an important part of an overall scheme implemented by Brazil to address an important environmental issue and Brazil had the right to decide how to implement such a scheme, provided it otherwise complied with Article XX.¹⁶⁷ The Appellate Body indicated that in the “short-term, it may prove difficult to isolate the contribution to public health or environmental objectives of one specific measure from those attributable to the other measures that are part of the same comprehensive policy.”¹⁶⁸ Moreover, the determination of “necessary” relates to the importance of the objectives served.¹⁶⁹ If that is the case, “considering the enormous importance attached to the problem of climate change in the present geopolitical scenario,”¹⁷⁰ such a measure may easily qualify within the necessity test. Additionally, in those cases, the Appellate Body found that *bans* were appropriate measures given the circumstances. A tax has much more limited trade implications and is much more likely to be upheld under any circumstance.

Alternatively, the measure could qualify under the Article XX(g) exception if the United States can demonstrate that the global climate is an exhaustible natural resource. In *U.S.—Gasoline*, a WTO panel and Appellate Body found that clean air is an exhaustible natural resource.¹⁷¹ According to Pauwelyn, because of “the problem of climate change” and its consequences, “it would be surprising if the WTO would not accept that the planet’s atmosphere (that is, the layer of gases around the earth that regulates the planet’s climate) is an ‘exhaustible natural resource.’”¹⁷² Secondly, the legislation as a whole—not the trade restriction in question—must be related to the objective.¹⁷³ Pauwelyn notes that, “[u]nless there are blatant inconsistencies or protectionist features in the domestic legislation, climate change legislation should normally pass this ‘related to’ test.”¹⁷⁴ Therefore, the WTO would likely recognize the global climate as an exhaustible natural resource.

Again, policymakers must attempt to address the issue holistically. Article XX(g) requires that decisions affecting imports and exports be made “in conjunction with restrictions on domestic production or consumption.”¹⁷⁵ Inconsistencies in other U.S. policies may lead WTO panel members to question the legitimacy of the environmental aims. For example, as noted above, the United

166. *Id.* ¶ 258(a).

167. *Id.* ¶ 155.

168. *Id.* ¶ 151.

169. *EC—Asbestos*, *supra* note 137, ¶ 172.

170. DHAR & DAS, *supra* note 16, at 43.

171. *U.S.—Gasoline*, *supra* note 67, ¶ 18.

172. Pauwelyn, *supra* note 13, at 498 (internal citations omitted).

173. *See U.S.—Gasoline*, *supra* note 67, ¶ 16; Pauwelyn, *supra* note 13, at 499.

174. Pauwelyn, *supra* note 13, at 500.

175. GATT, *supra* note 75, art. XX(g).

States currently heavily subsidizes meat production through ensuring cheap crops to feed livestock. The current regime of extensive subsidies for animal agriculture has significant trade law implications of its own.¹⁷⁶ Experts consider subsidies on commodities an environmental disaster.¹⁷⁷ “The more than \$300 billion of agricultural support that OECD countries provide annually, disadvantages developing country exporters and causes distortions in importers.”¹⁷⁸ Other countries have criticized the United States for holding domestic animal feed prices so low and thereby distorting the global marketplace.¹⁷⁹

Reducing or eliminating agricultural subsidies has been one of the key goals—and issues of considerable contention—in the Doha Rounds currently ongoing to renegotiate various WTO agreements.¹⁸⁰ IPCC has identified the elimination of subsidies as a measure that could reduce GHG emissions.¹⁸¹ Moreover, other commentators have argued that animal agricultural subsidies violate the United Nations Framework Convention on Climate Change (UNFCCC).¹⁸² If Congress were to first, or in concert, address some of these issues, the WTO panel might be more likely to find that the measure falls within the Article XX exception, and U.S. policy would be more consistent.

Even if the WTO finds that the provision falls within one of the Article XX exceptions, it still must comply with the chapeau of the Article, which imposes additional substantive obligations on parties.¹⁸³ In fact, this is frequently the most difficult part of the exception to meet.¹⁸⁴ The chapeau requires that measures falling within the exceptions must not be “applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade.”¹⁸⁵

There are a number of factors that WTO panels and the Appellate Body have taken into consideration in determining whether a measure complies with the requirements of the chapeau. These factors include: whether the legislation takes into account the conditions of foreign countries or essentially requires them to adopt the implementing nation’s regime; whether the country imposing the

176. See, e.g., Blandford, Boisvert & Fulponi, *supra* note 51, at 668.

177. See Person, *supra* note 55.

178. Blandford, Boisvert & Fulponi, *supra* note 51, at 668.

179. See Person, *supra* note 55, at 332.

180. See, e.g., Benjamin J. Bay, *World Trade Organization and the Millennium Development Goals: The Role of Multilateral Trade Negotiations in Achieving Food Security for the World’s Most Vulnerable Populations*, 43 GEO. J. INT’L L. 165 (2011); Matthew C. Porterfield, *U.S. Farm Subsidies and the Expiration of the WTO’s Peace Clause*, 27 U. PA. J. INT’L ECON. L. 999 (2006).

181. IPCC, *supra* note 44, at 31.

182. See Lisa Winebarger, *Standing Behind Beastly Emissions: The US Subsidization of Animal Agriculture Violates the United Nations Framework Convention on Climate Change*, 27 AM. U. INT’L L. REV. 991 (2012).

183. See, e.g., Tamiotti, *supra* note 53, at 1206.

184. See, e.g., *id.*

185. GATT, *supra* note 75, art. XX.

measure has engaged in serious efforts to reach a multilateral solution; and whether the provision is implemented so as to afford “basic fairness and due process.”¹⁸⁶ Therefore, if the measure “fails to take into account the specific conditions prevailing in developing countries and does not pay heed to the efforts made by these countries towards adoption of ‘nationally appropriate’ mitigation actions, then there is a high chance that it may be regarded as ‘arbitrary or unjustifiable discrimination.’”¹⁸⁷ Moreover, according to CTE Counsellor Ludivine Tamiotti, countries attempting to support a GHG emissions tax under the exception must be prepared to “establish a clear risk of carbon leakage [and] evidence that such policies contribute to the actual decision to relocate an industry to another country with weaker carbon policies.”¹⁸⁸ Tamiotti goes on to point out that “the fact that a determination of carbon leakage is closely linked to concepts of competitiveness and costs renders the establishment of a distinct environmental rationale objective for border carbon measures more challenging.”¹⁸⁹ Therefore, lawmakers must design the tax very carefully and take into account a range of considerations and assessing whether their justifications withstand scrutiny.

The WTO Appellate Body has addressed some of these requirements in detail. In *Shrimp-Turtle I*, the Appellate Body found that the measure did not comply with the chapeau of Article XX because its dictation of the specific environmental measures that other countries must take to comply undermined their sovereignty.¹⁹⁰ Additionally, the Appellate Body criticized the United States for implementing the measure without engaging in serious efforts to reach a multilateral agreement.¹⁹¹ By the time the Appellate Body reviewed the case again, the United States had engaged in a number of “good faith efforts” to reach such an agreement.¹⁹² Despite the fact that these efforts did not succeed, the Appellate Body upheld the measure as compliant with GATT.¹⁹³

Demonstrated efforts to comply with an existing multilateral environmental agreement will more likely make that measure WTO-compliant. Keith Kendall has argued that “even if the tax affects WTO members that are not signatories to [a] multilateral agreement, so long as the . . . treaty was negotiated and has been implemented in good faith, then the measure has a very reasonable prospect of successfully qualifying for exception.”¹⁹⁴ The Kyoto Protocol, for example,

186. See Pauwelyn, *supra* note 13, at 502-05; Tamiotti, *supra* note 53, at 1207.

187. DHAR & DAS, *supra* note 16, at 53.

188. Tamiotti, *supra* note 53, at 1208.

189. *Id.*

190. *Shrimp-Turtle I*, *supra* note 67, ¶ 163-64.

191. *Id.* at 167-69.

192. Appellate Body Report, *United States—Import Prohibition of Certain Shrimp and Shrimp Products—Recourse to Article 21.5 of the DSU by Malaysia*, ¶ 152, WT/DS58/AB/RW (Nov. 21, 2001).

193. *Id.*

194. Kendall, *supra* note 8, at 86.

“calls for a ‘progressive reduction or phasing out of market imperfections’” and points to measures such as carbon taxes to address these market imperfections.¹⁹⁵ While decisions not to impose the GHG emissions tax on nations that have similar taxes or very poor nations would likely violate MFN, such provisions may be necessary to comply with the chapeau of Article XX.¹⁹⁶ Ultimately, Congress could likely design a tax that falls within one of these exceptions given the varied options and the nature of the threat to be addressed; however, policymakers would need to consider numerous factors and design the tax carefully.

Despite some flexibility to design a tax that complies with WTO obligations under the GATT, the WTO has yet to define the limits of such flexibility. Ultimately, “no definitive conclusion can be reached on this contentious and complex issue of WTO-compatibility or otherwise of the [measure] unless and until such a measure gets implemented and comes under the scanner of the WTO dispute.”¹⁹⁷ Even a tax designed to be WTO-compliant may not be ideal because of a number of countervailing considerations, including the way that the global community has chosen to address climate change.

III. THINKING HOLISTICALLY: COMMON BUT DIFFERENTIATED RESPONSIBILITIES, OTHER CONSIDERATIONS, AND OTHER OPTIONS

Even if the United States could design a WTO-compliant BTA based on a GHG emissions tax of meat, it might still violate other international agreements or lead to other consequences. As noted in regards to *Shrimp-Turtle I and II*, multilateral efforts to address environmental problems are preferable to unilateral action. The United States should consider both effectiveness and impact prior to implementing a unilateral measure. This section addresses the international community’s framework for addressing the GHG emission reduction responsibilities of developed and developing nations, potential ways to design a meat emissions tax that take these considerations into account, and further domestic steps that the United States could take instead of, or in addition to, a tax.

The UNFCCC attempts to address the diverging capacities and responsibilities of different regions of the world. Because developed nations are the major GHG contributors, and developing nations often struggle financially and technologically to mitigate GHG emissions, the UNFCCC places the primary responsibility for reducing GHGs on developed (Annex I) nations.¹⁹⁸ The UNFCCC only requires developing nations to adopt “nationally appropriate mitigation actions”

195. Kyoto Protocol to the United Nations Framework Convention on Climate Change, UNFCCC/CP/1997/7/Add.1, art. 2.1(a)(v), Dec. 10, 1997, 37 ILM 22 (1998); see also Vincent, *supra* note 7, at 169.

196. See Pauwelyn, *supra* note 13, at 502-03.

197. DHAR & DAS, *supra* note 16, at 54.

198. United Nations Framework Convention on Climate Change, art. 4(2)(b), May 9, 1992, 1771 U.N.T.S. 107.

in the context of sustainable development.¹⁹⁹

A unilateral U.S. tax would have a disproportionate impact on developing nations. Certain commentators have therefore questioned whether implementation of an emissions tax BTA may violate these obligations by negatively impacting developing nations in a manner that the UNFCCC is designed to prevent.²⁰⁰ “Border carbon adjustments could shift the burden created by climate policies adopted in developed countries to developing countries and emerging economies, thereby disregarding the obligation of industrialized countries to take the lead in fighting climate change.”²⁰¹ Therefore, implementation of a BTA without taking these considerations into account could undermine the delicate balance between addressing the realities of climate change and the limitations of different nation states.

On the other hand, the GHG emissions of developing nations—particularly China and India—have been rapidly increasing,²⁰² and the majority of GHG emissions from animal agriculture comes from developing countries. Imposing the tax only in developed countries would likely lead to emission leakage. When researchers examined the potential of an international methane tax, they found that “when the tax is limited to Annex 1 countries, about two-thirds of the emissions reductions are offset by emissions leakage resulting from increased production in non-Annex 1 countries.”²⁰³ Given these countervailing considerations, researchers encourage the development of an international agreement that implements an emissions tax based on national average emissions combined with sectoral emissions trading. If “emissions caps for non-Annex 1 countries were set at baseline emission levels, non-Annex 1 countries would earn approximately USD 2.4 billion annually from emission permit sales. Permit (and tax) revenues could be used to help compensate consumers for higher food prices and compensate producers for higher costs.”²⁰⁴ This revenue “could be used to promote the development and adoption of practices and technologies that reduce GHG emissions.”²⁰⁵ Such a scheme would reduce beef production in Latin America and Africa significantly, lower global methane levels 4.6 percent from 2013 levels,²⁰⁶ and take into account several countervailing considerations.

199. *See id.*; DHAR & DAS, *supra* note 16, at 51.

200. *See, e.g.,* Blandford, Boisvert & Fulponi, *supra* note 51, at 671; DHAR & DAS, *supra* note 16; CIEL & FOEE REPORT, *supra* note 53.

201. CIEL & FOEE REPORT, *supra* note 53, at 106.

202. *See* DHAR & DAS, *supra* note 16, at 50; Valentina Durán Medina & Rodrigo Polanco Lazo, *Trade, Investment, and Sustainable Development: A Legal View on Border Tax Adjustments and Climate Change: A Latin American Perspective*, 11 SUSTAINABLE DEV. L. & POL’Y 29 (2011).

203. Key & Tallard, *supra* note 47, at 388.

204. *Id.* at 410.

205. *Id.*

206. *Id.*

Other researchers explored the impact of various agricultural climate change policies on “agricultural production, producer livelihoods, and food security” worldwide.²⁰⁷ They determined that a combination of policies, including taxes, in different parts of the world would have the greatest mitigation impact.²⁰⁸ They further determined that when only Annex I countries impose climate policies, “a portion of land-based abatement in Annex I countries is lost through increased emissions (leakage) in unregulated non-Annex I countries.”²⁰⁹ Alternatively, “[a]pplication of the GHG emissions tax and the forest carbon sequestration incentive to all countries . . . doubles global agricultural emissions abatement.”²¹⁰ In that scenario, nearly all the abatement occurs in developing countries, which are “compensated for their emission tax expenses.”²¹¹ These analyses show that a variety of measures implemented on an international scale will likely have the greatest impact and fewest unintended consequences.

In the absence of a meaningful and effective international agreement, another possibility would be to impose a GHG emissions tax on imports and exports and use the fees raised from the BTA to help developing countries respond to climate change. Using the revenue to help developing nations would show that the measure’s purpose is not hidden protectionism and “would certainly strengthen the case that the BTA does not violate WTO law.”²¹²

The United States could take other measures to address animal agriculture’s contribution to climate change. As noted above, revamping the U.S. subsidy regime could be a significant step toward internalizing animal agriculture’s externalities and addressing its GHG emissions. The climate implications of our animal agriculture policies are disastrous and could be changed within existing law.²¹³ The U.S. Environmental Protection Agency has authority to act within existing law to require that CAFOs comply with the Clean Air Act,²¹⁴ which limits emissions of pollutants, including—after the Supreme Court decision in *Massachusetts v. EPA*—greenhouse gases.²¹⁵ These measures could begin to address domestic animal agriculture’s contribution to climate change by requiring that the animal agriculture industry pay for some of the negative externalities

207. Golub et al., *supra* note 5, at 20894.

208. *Id.* at 20894.

209. *Id.* at 20895.

210. *Id.*

211. *Id.*

212. HILLMAN, *supra* note 88, at 14.

213. See generally Marya Torrez, *Cows, Congress, and Climate Change: Authority and Responsibility for Federal Agencies to End Grazing on Public Lands*, 14 VT. J. ENVTL. L. 1 (2012).

214. See, e.g., J. Nicholas Hoover, *Can't You Smell That Smell? Clean Air Act Fixes for Factory Farm Air Pollution*, 6 STAN. J. ANIMAL POL'Y 1, 10 (2013); Laura Karvosky, *EPA Gives Animal Feeding Operations Immunity from Environmental Statutes in a Sweetheart Deal*, 8 VT. J. ENVTL. L. 115 (2006); Michele Merkel, *Raising a Stink: Air Emissions from Factory Farms* (2002), available at http://environmentalintegrity.org/news_reports/Report_Raising_Stink.php.

215. *Massachusetts v. EPA*, 549 U.S. 497 (2007).

of producing animals for food. These steps would also demonstrate the United States' good faith efforts to address climate change, which might encourage other nations to take similar measures and make the ultimate goal of reaching an international agreement more likely.

These alternative measures would not raise the trade law implications of solely relying on a BTA. Lawmakers may determine that the trade law implications do not outweigh the benefits of a BTA. Therefore, legislators might look to alternatives that could achieve similar results in reducing the negative environmental impacts of the animal agricultural industry, such as taxes developed on an international scale and reforming the U.S. subsidy regime.

CONCLUSION

Climate change impacts the entire planet, and efforts in one country or region will be unsuccessful if other countries or regions counteract them. An international solution would be preferable, but thus far, international solutions have lacked universal support and have failed to achieve their goals. Ultimately, the United States and any other nations implementing measures to address climate change will need to take into account a number of considerations such as trade law implications, compliance with other international agreements, and unintended impacts such as those on developing nations. The United States must balance those considerations against the realities of climate change and the need to take action while it is still possible to reverse some of the consequences.

As policymakers and advocates engage in efforts to address climate change, they should think about ways to tackle animal agriculture's contribution. As proposed by members of the scientific community, a tax on the GHG emissions of meat is one option. Such a tax raises a number of policy and legal considerations domestically and internationally. While a tax may be designed so as to gain political support and comply with WTO law, advocates must consider whether it is the best way to address climate change given international agreements and potential unintended consequences, particularly for the Global South.

While it is preferable for the international community to act in concert to address this issue, if multilateral agreements do not come to fruition, individual countries will need to take unilateral action. If Congress can move forward on climate change and animal agriculture's contribution, it may decide that a GHG emissions tax and BTA are viable options worthy of serious consideration despite the concerns. These options should, however, be deliberated along with other efforts to comprehensively change the way that the United States regulates animal agriculture.