

## A Green Thumb on the Invisible Hand: Exploring Environmental Trade Policies

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The world is growing increasingly globalized; as a result, individual markets are becoming interdependent, and an international market is developing. With the reduction of trade barriers, such as deregulation of financial markets and decreases in currency controls, and an increase in technological development, which creates ease and speed in moving funds across borders rapidly and at a low cost, comes increased economic growth.<sup>1</sup> Nations with limited power are becoming more economically and politically influential due to their increased activity in the global market.<sup>2</sup> With these third world and developing nations rising to industrialization comes an extreme effect on the environment. More production leads to more used resources and more waste.<sup>3</sup> In addition, the world's population continues to grow larger and is estimated to grow at an even faster pace in the next forty years,<sup>4</sup> with mainly third world and developing nations seeing the largest amount of growth.<sup>5</sup> With a larger population comes an increase in demand and a need for more production of goods.<sup>6</sup> This production of goods is regulated through an economic market that is controlled by both producers and consumers in order to produce benefits for all.

Economists and other scholars theorize different forces that guide the market to stay balanced and profitable. One of such theorist, Adam Smith, asserts in *The Wealth of Nations*, that an "invisible hand" guides human self-interest to benefit the free market or the public interest.<sup>7</sup> Smith claims that when individuals in the free market act on their own individual interest, the "invisible hand" transforms their self-interest into a public benefit.<sup>8</sup> However, as Garrett Hardin argues, if this assumption of an "invisible hand" is not correct, then self-interest

may not benefit the whole, and people may actually be hurting the general public. As population grows more quickly, so does the demand for goods. The “invisible hand,” if it actively exists, may guide the self-interest of this growing population for the general good of the world’s economy, but how far does it go to protect the environment? As population grows, more natural resources will be abused within a nation and more trade will occur between nations to sustain growth. The effect trade has on the environment is important to study to create the most effective policies to limit degradation, while still providing for the global population. This paper will examine the effects of human consumption on the environment as well as international environmental policies in effect today, and it will propose a new international cap-and-trade policy to alleviate environmental degradation in regard to trade.

Degradation due to trade falls in line with the “tragedy of the commons” as first proposed by William Forster Lloyd and reexamined by Garrett Hardin.<sup>9</sup> Those who are joined in common land with intent to use it for the general good often find that once the public’s needs have been met, there is no reason to avoid acting upon self-interest.<sup>10</sup> For instance, if a herdsman were using common land to raise cattle, that herdsman would only benefit from adding one more cow to his herd.<sup>11</sup> “As a rational being, each herdsman seeks to maximize his gain.”<sup>12</sup> However, while this additional cow benefits that herdsman, it also presents a disadvantage because one additional cow has a negative environmental impact from overgrazing. On communal land, all of the herdsman will be affected.<sup>13</sup> Unfortunately, this problem is not limited to one additional cow; each and every herdsman will be enticed to “[seek] to maximize his gain,” and therefore, “each man is locked into a system that compels him to increase his herd without limit – in a world that is limited.”<sup>14</sup> This idea of “the tragedy of

the commons” is a large factor in environmental degradation. The herdsman trades his one cow for money, and then he adds two more cows, then three, then four, for additional benefit; in the process, the land becomes overgrazed and, if left unchecked, it could deteriorate into desert. In this way, it is easy to see how production and trade can lead to environmental degradation. As individuals working within the commons act on self-interest, pollution and unsustainable practices increase, and issues such as climate change grow more prevalent. The “invisible hand” guides this self-interest, but only so far as to promote an individual’s welfare and profit; the “invisible hand” does nothing to entice environmental sustainability.

Although not all of the world’s environmental degradation is caused by trade, a significant amount can be attributed to it.<sup>15</sup> For example, annually, 8.5 million hectares of forests are logged illegally, and another 12 million hectares are cut down to build cities, a total of 20.5 million hectares of degraded land.<sup>16</sup> The timber is used for trade – paper and wood products – and the land is used for housing an increasing population or for agricultural purposes,<sup>17</sup> such as cattle grazing or land for crops.<sup>18</sup> The bare land displaces species or kills them all together as they no longer have the shelter or habitat in which they can survive.<sup>19</sup> The result is a major loss of biodiversity and can lead to the extinction of some species.<sup>20</sup> Deforestation also results in a change of climate; without the trees to facilitate water evaporation to continue the water cycle, and without the trees’ canopy to protect the soil from the sun’s harsh rays and to absorb heat for the night, the land quickly becomes dry and desert-like.<sup>21</sup>

In addition to climate change, deforestation is harmful to the environment because humans are producing a significant amount of greenhouse gases that are released into the

atmosphere, and fewer trees means less recycling of these gases. These greenhouse gases, such as carbon dioxide, methane, and nitric oxide, get trapped in the atmosphere leading to a warming effect that has been coined “global warming.”<sup>22</sup> If this warming trend continues, it is estimated that sea levels will rise about 7 to 23 inches by the end of the century, hurricanes and storms are likely to increase in intensity, and ecosystems will change entirely due to species moving northward to escape the heat and other animals not being able to survive in their changed environment.<sup>23</sup>

Climate change due to greenhouse gases is primarily due to human emissions in relation to production.<sup>24</sup> Most of the human emissions causing global warming “come from the combustion of fossil fuels in cars, factories and electricity production.”<sup>25</sup> Additional emissions come from “methane released from landfills and agriculture (especially from the digestive systems of grazing animals), [and] nitrox oxide from fertilizers.”<sup>26</sup> The use of cars and land for grazing, of factories and power plants, and of fertilizers and landfills can all be attributed to trade in some way or another. More cars are used to transport more humans to their new jobs at call centers in India or in factories in China, perpetuating production and trade as the goods they produce are traded to foreign nations. Grazing land is used to raise animals to be traded as meat; power plants provide electricity to fuel factories that make production possible, and all the while, the production of goods in factories creates waste that fills the landfills. Trade is fueling environmental degradation.

The effects of global warming and climate change can be seen most prominently in the desertification in China. According to the Food and Agriculture Organization of the United Nations, China’s desertification “encompasses over 30 percent of the total land territory

(approximately 3,327 million km<sup>2</sup>) and adversely affects 400 million people.”<sup>27</sup> As one of the world’s leading developers, China is able to participate in the global market , to a degree, due to this desiccated environment. In the areas that are affected, there is limited economic growth, an increase in health problems like asthma, and the continuation of environmental degradation.<sup>28</sup> Sandstorms caused by the unsustainable use of resources in China damage not only the countryside but also the cities. A sandstorm in May of 1993 accrued “a total economic damage of 560 million RMB yuan” or a little less than 89 million U.S. dollars, not to mention the loss of soil and other environmental impacts.<sup>29</sup> An estimation developed from a UNEP model predicts that desertification costs China a total of 1.8 billion yuan or about 286 million U.S. dollars a year.<sup>30</sup> In China there is insufficient funding for the restoration and reconstruction of the land and cities affected by the sandstorms; at the rate China is moving right now, it is estimated that to restore the land to what it was in the past would take 300 years if humans no longer produced so much waste – something that is not likely to happen.<sup>31</sup>

As shown, environmental degradation eventually leads to economic costs. Although industrial production and international trade are meant to facilitate economic growth, the misuse of natural resources in production and the waste that production creates eventually end up causing more economic strain than growth. Therefore, environmental policies need to be linked with trade policies to prevent further degradation of the environment and further degradation of the world economy. A green thumb needs to be added onto the “invisible hand” in the free market. China will not be the first or the last country to feel the impacts of production on the environment.

Over the past couple of decades, more than 200 multilateral environmental agreements (MEAs) have been created, but fewer than 20 have involved trade, and only a small portion of those have actually had any impact.<sup>32</sup> These agreements come mostly through the United Nations' Environmental Programme (UNEP), an organization set up through the United Nations to facilitate environmental preservation and conservation.<sup>33</sup> The UNEP has created many MEAs; one of the most successful (in terms of participation), is the Kyoto Protocol.

In 1997, government officials and environmentalists met to discuss a new policy, the Kyoto Protocol.<sup>34</sup> This policy is an international effort to reduce carbon, methane, and nitric oxide emissions to 5% of a country's 1990 emissions.<sup>35</sup> Since it was first discussed, the Kyoto Protocol has gained a total of 192 parties in its agreement<sup>36</sup> and incorporates three different methods of reducing emissions: "emissions trading," "clean development mechanisms," and "joint implementation."<sup>37</sup> "Emissions trading" refers to a type of "cap and trade." It puts a percentage cap on the amount of greenhouse gases (GHGs) that companies are allowed to put into the atmosphere.<sup>38</sup> If a company is going to exceed its limit, then that company must buy some of the GHG credits from another corporation.<sup>39</sup> This arrangement provides incentive for companies to emit less GHGs because they can make a profit from any unused credits. The "clean development mechanism" gives developed nations the ability to acquire more carbon credits by helping and funding a developing nation in incorporating "an emission-reduction project."<sup>40</sup> "Joint implementing" calls for Developed Nation A to fund "an emission-reduction project" in Developed Nation B.<sup>41</sup> This approach is seen as beneficial for Developed Nation A because it allows that nation to fulfill its agreement in the Kyoto Protocol, and it benefits

Developed Nation B, as “the host Party benefits from foreign investment and technology transfer.”<sup>42</sup>

However, this policy has major shortcomings and disadvantages despite its number of supporters. The protocol itself offers no measures to penalize a country that does not meet the goals of the emission-reduction program; furthermore, a nation has the right to withdraw from the Kyoto Protocol with one year’s notice, making non-compliance even more possible.<sup>43</sup> In addition to the lack of penalties, there is also an overall confusion as to what defines “reductions” of emissions.<sup>44</sup> Leaders of some countries, such as Canada and Russia, think that because of their large forests, which recycle carbon dioxide, they should be rewarded with additional carbon credits, while leaders of other countries think that the planting of forests should accrue credits as well.<sup>45</sup> All nations want to earn the most credits in order to continue producing the most GHGs, but instead of just creating a competitive market for carbon credits, this competition creates negotiation conflicts and hostility towards the Kyoto Protocol itself. Instead of bringing nations together in one combined effort to reduce GHG emissions, the Kyoto Protocol is dissuading the global community from participating in future agreements.

Finally, the most significant shortcoming to the Kyoto Protocol is its exclusion of developing nations from its policies. Economists and politicians alike have argued that it is unfair for developed nations to expect developing nations to reduce their GHG emissions because developed nations had no restrictions on their industries when they were developing. Developing nations rely on the older and dirtier technologies, the technologies most easily accessible and reliable, in order to industrialize.<sup>46</sup> These countries’ “infrastructure and policies” would not be able to support an “environmentally-friendly alternative” to existing processes.<sup>47</sup>

With this addendum to the Kyoto Protocol, countries like China and India, with two of the largest populations and most rapidly growing industries, are exempt from the requirements of the protocol.<sup>48</sup> China itself is one of the largest global producers, so all the waste and GHGs that the Chinese are producing are going unchecked.<sup>49</sup> Overall, significant degradation can occur in developing nations with no ramifications, and developed countries can buy unsustainable goods from developing nations while still “meeting” their Kyoto goals. In order to be really effective, the Kyoto Protocol would have to include all nations; the environment is not just confined to one country, so any action one nation would have on the environment, such as GHG emissions, will affect all other nations globally.<sup>50</sup> The world as a whole acts as the “commons” that all individuals have an effect on.

Absent from those who have agreed to the Kyoto Protocol is the United States; this failure to join the global effort of reducing GHG emissions, despite the U.S.’s help in creating the protocol, negatively affects the global effort to limit environmental degradation. Environmental agreements need to be international in order to have an effect on issues such as GHG emissions and any resulting climate change. The Kyoto Protocol touches on some potentially effective methods of reducing GHG emissions, but it fails to implement these methods in an effective way. As explained above, the Kyoto Protocol fails to enforce emission reductions, does not state what a reduction of emissions entails, and exempts developing nations from following the Protocol’s guidelines. These shortcomings could be avoided with a different policy.

In the following pages I will outline the details of a new policy (hereafter referred to as the Green Thumb (GT) Program) that will draw upon the Kyoto Protocol’s idea of cap and trade



while also eliminating the Protocol's flaws. In addition, I will explain the way in which the GT Program will be integrated within the United States.

The GT Program would be an international policy with a goal of all nations agreeing to its principles. In essence, the program will put a cap and trade on the globe's GHG emissions and allow all countries to trade their carbon credit allotments with each other. Internationally, each nation will obtain an allotment of carbon credits, or carbon emissions in tons, based on current production levels as well as population size; nations with more production and more population will accrue larger allotments. Participating nations will agree to trade goods and services only with other participating nations, thereby enticing non-participating nations to join in the effort to reduce GHG emissions. Every year, each nation will have to produce a carbon emission report for the previous year for review by the GT Program Delegates, a group comprised of one government official from each participating nation. In this meeting, if a nation has exceeded its allotment of carbon credits, it must either buy credits from a nation with extra credits, or plant a predetermined number of trees per ton of carbon, or, if the offending nation is developed, pay a predetermined price per ton to the GT Program Fund. If the offending nation is developing or third world, then the money that would have been placed in the GT Program Fund must be invested in sustainable energy projects within that nation. If none of these requirements is met, then all GT Program participating nations are required to place economic sanctions (in the form of tariffs or reduction of trade) on the nation at fault. During each four year term, the GT Program Delegates will meet to discuss the next term's cap and to address any complications that arise from the program.

The GT Program Fund will be an account set up to benefit conservation and preservation efforts. Each year, the fund will be used to implement projects that create sustainable energy in developing nations. These projects could include wind farms, solar panel plants, and production of hybrid cars, depending on the needs of each developing nation. The GT Program will create a group of scientists and technicians who will go to developing nations to help create and implement these projects effectively as well as report back to the GT Program Delegates on a regular basis about the status of the projects.

From the United States' GHG allotment, the U.S. will create a state-by-state run operation. Each state will receive its own allotment of the total national allotment, basing the cap on each state's current population and production levels. Corporations and industries will receive their allotment of GHG emissions based on the state's decision of how to distribute their carbon credits. If a corporation exceeds its allotment of credits, it must buy some from another company within the same state or from a company in another state. If a state as a whole exceeds its carbon allotment, then the state would have to tax its citizens in the next fiscal year in order to buy credits from another state. If the U.S. as a whole exceeds its international carbon credit allotment, then a federal tax would be implemented in order to buy carbon credits from another nation to fund the planting of trees or to pay the fine to the GT Program Fund.

The GT Program is advantageous because it would be similar to the Kyoto Protocol in that it would be making an effort to reduce GHG emissions and to limit climate change. However, unlike the Kyoto Protocol, the GT Program would not limit participation to developed nations; it would provide clear sanctions for exceeding the cap, and it would clearly define what

“reductions” and “emissions” are involved. With the introduction of an international cap and trade agreement, the world would see the development of a new economic market. This market would become as competitive and as economically stimulating as other markets, like the market for goods and services. The new market would boost the international economy as well as domestic economies, thereby benefitting everyone. Furthermore, decreasing GHG emissions will reduce environmental degradation, which in turn will also lead to lower economic costs, so that the degradation that has occurred in nations like China can be prevented in future.

Despite the economic and environmental advantages provided by an international cap and trade system, there would be some perceived disadvantages that would potentially dissuade the U.S. from joining in such an agreement. One of these disadvantages is that there would be no federal standard of emission reduction in the U.S. as all standards for deciding on allotments would be state-based. However, this state-based approach would actually suit the general population better than if the federal government had to regulate the whole country. Since what is applicable in Georgia may not be applicable in Virginia, a state-run program will appeal more to the general population as a state’s citizens will feel that their interests are being upheld.

A second disadvantage of the GT Program from an American point of view would be the price for consumers. If companies were forced to buy carbon credits from other corporations, then they would have to raise the prices of their goods or services in order to pay for the credits, thereby making consumers pay more. However, this issue can also be seen as a benefit as the higher prices would reduce the number of products consumed and reduce the quantity

of natural resources used in production. For example, if an electricity company had to buy carbon credits and increase prices, then the consumers would have some incentive to implement strategies to use less electricity. As a result, the amount of electricity consumed and the natural resources used to produce that electricity would both be reduced, and the environment would benefit.

The GT Program is a type of “sticky power,” as Kenneth Waltz would call it, as it is a trade agreement that is mutually beneficial to join.<sup>51</sup> Participating countries will not trade with non-participating countries, so if the largest developers in the world are on board, other nations will want to join for the benefit of still being able to trade.<sup>52</sup> Additionally, because the American economy leads the global market, especially with the large rate of consumption by its citizens, the United States holds a “soft power,” in terms of economics, that could be used to persuade other nations to join the GT Program.<sup>53</sup> If the GT Program were adopted by the international community, over time it would significantly decrease GHG emissions, which would lead to a reduction in climate change and environmental degradation. It will be not only environmentally beneficial but also economically beneficial in the long run as it will create an entirely new global market. Hardin would argue that the GT Program would implement a type of coercive law that would “make it cheaper for the polluter to treat his pollutants than to discharge them untreated,” or in this case, it would be cheaper for the polluter to reduce pollutants than to continue to discharge them.<sup>54</sup> The GT Program would create an environmental trade agreement that would preserve the common interest while also using a green thumb on the “invisible hand” to preserve the environment as well.

Currently, there are not many environmental trade agreements effectively working in the global atmosphere; the GT Program would create an environmental agreement around the basis of trade – the trade of GHG emissions. The issue of environmental degradation is growing more pressing as nations develop their industries and simultaneously produce GHGs and other waste. With a policy that is aimed at reducing emissions with the incentive of economic gain, individual nations as well as the world as a whole might be able to avoid the economic losses caused by environmental degradation and the loss of the environment itself. Therefore, the best way to proceed would not be to implement national policies solely aimed at trade or the environment, but to establish global policies that will, in the end, incorporate both.

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<sup>8</sup> Ibid.

<sup>9</sup> Garrett Hardin, 299.

<sup>10</sup> Ibid., 300.

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<sup>12</sup> Ibid.

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<sup>39</sup> "The Mechanisms Under the Kyoto Protocol: Emissions Trading, the Clean Development Mechanism and Joint Implementation."

<sup>40</sup> Ibid.

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<sup>50</sup> Ibid.

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