

# THE SUN AND THE SCYTHE: COMBINING CLIMATE AND POPULATION POLICY TO SOLVE THE GREATEST CHALLENGES THE WORLD HAS EVER FACED

*Lee Shlamowitz\**

## TABLES OF CONTENTS

|  |     |
|--|-----|
| I. INTRODUCTION .....  | 248 |
| II. MALTHUSIAN CATASTROPHE .....   | 252 |
| A. The Size of a Population is Inextricably Linked to the<br>Amount of Resources Available .....                         | 252 |
| B. Technology Can Alter, but Not Eliminate, the Correlation<br>Between the Size of a Population and Available Food ..... | 253 |
| C. Renewed Fears of Malthusian Catastrophe .....   | 256 |
| III. CHINA'S ONE-CHILD POLICY .....  | 257 |
| A. The Years Prior to One-Child .....  | 258 |
| B. How Well It Catches Mice: Regime Change Set the<br>Stage for One-Child .....  | 260 |
| C. Ruthless Enforcement Justified with Threats of<br>Malthusian Catastrophe .....  | 262 |
| D. Impact .....  | 264 |
| E. Lessons for the World .....   | 265 |
| IV. THE UNITED NATIONS IS POISED TO RESPOND TO A MALTHUSIAN<br>CATASTROPHE .....   | 265 |
| A. The United Nations' Organizational Framework as It Relates<br>to Population Policy .....                              | 266 |
| B. The ICPD Programme: A Careful Balance .....   | 267 |
| C. The Impact and Enforcement of the ICPD Programme .....  | 267 |
| D. The United Nations' Responsibility for Establishing<br>International Policy on Climate Change .....                   | 268 |
| V. A COMPARATIVE ANALYSIS OF CHINA'S ONE-CHILD POLICY<br>AND THE ICPD PROGRAMME .....                                    | 270 |
| A. Global Solutions to Global Problems .....   | 270 |
| B. Philosophical Underpinnings .....   | 271 |
| C. Population Policy: Shaped by Prevailing Perceptions of<br>Resource Scarcity .....                                     | 272 |
| D. Other Policy Considerations .....   | 273 |

|   |     |
|---|-----|
| VI. CONCLUSION .....                                | 274 |
| A. An Unstoppable Force, an Immovable Object .....  | 274 |
| B. Hope for the Future Lies in Today's Polices..... | 275 |

## I. INTRODUCTION

In January of 2009, the “miracle” birth of octuplets forced observers to ask whether the state could ever intervene to prevent someone from having children.<sup>1</sup> The team of forty-six doctors that delivered the octuplets proclaimed the birth a medical marvel.<sup>2</sup> However, as the euphoria subsided and reality set in, troubling ethical questions began to arise.<sup>3</sup> The mother was single and already had six other young children at home, leading the public to question how she would be able to provide for all *fourteen* children.

Other questions also arose about the propriety of the procedure that the mother had used to become pregnant. The procedure was voluntary<sup>4</sup> but potentially very dangerous. Despite being advised about the extreme risks of carrying eight fetuses, she opted to carry all to full term. At the time, “[s]he ha[d] no job, no income, and owe[d] \$50,000 in student loans.”<sup>5</sup> Not surprisingly, there was a harsh public reaction once it became clearly possible that taxpayers would shoulder the astronomical costs of caring for the octuplets.<sup>6</sup> Nevertheless, the octuplets birth propelled their mother to pop culture stardom.<sup>7</sup>

---

\* Note & Comment Editor, Temple International and Comparative Law Journal; J.D. (Expected May 2010), The Temple University James E. Beasley School of Law; B.A. in Philosophy with Minors in International Studies and Spanish, The Pennsylvania State University. The author expressed sincere gratitude to his faculty advisor, Professor Eleanor Myers, for her patience and insight.

1. Mike Von Fremd et al., *Six Kids, Eight More: Ethicists Speak Out*, ABC NEWS, <http://abcnews.go.com/Health/WomensHealth/Story?id=6769355&page=3> (last visited Mar. 1, 2009).

2. *Id.*

3. Karen Anderson, *Ethical Questions Raised in California Octuplets Case*, CBS NEWS, Feb. 2, 2009, <http://wbztv.com/local/ivf.baby.making.2.924975.html> (last visited Apr. 17, 2010).

4. Ed Harris, *Investigation Into Octuplets' IVF Doctor*, EVENING STANDARD (LONDON), Feb. 11, 2009, <http://www.thisislondon.co.uk/standard/article-23639038-details/Investigation+into+octuplets%27+IVF+doctor/article.do> (last visited Apr. 17, 2010).

5. Kimi Yoshino & Jessica Garrison, *Octuplets Could be Costly for Taxpayers*, L.A. TIMES, Feb. 11, 2009, available at <http://www.latimes.com/news/local/la-me-octuplets11-2009feb11,0,1790195.story> (last visited Apr. 17, 2010); see also *Octuplets' Family Filed for Bankruptcy*, CBS News, The Morning Show (2009), <http://www.cbsnews.com/stories/2009/01/30/earlyshow/health/main4764432.shtml> (noting that the mother and her six children live with her parents in a modest home, and “[t]here's been no mention of the octuplets' father.”). A recent bankruptcy filing and the relatively recent abandonment of a residence further suggest that she lacks the means to support the new additions to her family. *Id.*

6. See NOVA, *Human Numbers Through Time*, <http://www.pbs.org/wgbh/nova/worldbalance/numb-flash.html> (interactive map in Adobe Flash format) (last visited Mar. 4, 2010).

7. See, e.g., Lynette Rice, *Octuplets: TV and Movie 'offers are serious,' Says Mom's Publicist*, ENTERTAINMENT WEEKLY, Feb. 11, 2009, available at

The octuplets' birth also provided an isolated example upon which to project the broader discussion about reproductive rights. It underscores the fact that even though everyone is, and generally should be, free to reproduce without legal interference, the unchecked exercise of that liberty may come into tension with public welfare. On one hand, it seems troubling to suggest that the law should restrict a person's right to have children. On the other hand, limiting an individual's right to reproduce to "protect[] the public" from grave foreseeable harm may also seem justifiable.<sup>8</sup>

Something elementary lies at the heart of the issue: the balance of supply and demand. Like tax revenue available to for social welfare programs, the Earth's resources are finite.<sup>9</sup> Thus, supply is fixed. Demand, however – whether for tax dollars or the Earth's resources – rises and falls with the number of mouths to feed.<sup>10</sup> Greater populations put ever-increasing pressure on the availability of resources.

The newest data suggests that a global imbalance of supply and demand is more likely than ever. While the quantum of resources has stayed constant, the worldwide population has exploded in an alarmingly short period of time.<sup>11</sup> The U.S. Census Bureau expects that trend to continue,<sup>12</sup> projecting the global population to exceed 9.5 billion by 2050.<sup>13</sup> This number is quite shocking when compared to the global population in 1950 of about 2.5 billion.<sup>14</sup>

An escalating global population not only increases pressure on the availability of the planet's resources, but also relates in complex and subtle ways to planetary crisis in general.<sup>15</sup> Growth of industrialized human populations generally results in a corresponding release of CO<sub>2</sub> emissions,<sup>16</sup> a major cause of global warming.<sup>17</sup>

---

<http://hollywoodinsider.ew.com/2009/02/11/octuplets-offer/>.

8. See, e.g., Dan Slater, *Can a Judge Order a Woman to Stop Having Babies?*, WALL ST. J., Sept. 12, 2008, available at <http://blogs.wsj.com/law/2008/09/12/can-a-judge-order-a-woman-to-stop-having-children/>; see also Sentencing Law and Policy Blog, *Travis Judge Tells Woman to Stop Having Kids*, [http://sentencing.typepad.com/sentencing\\_law\\_and\\_policy/2008/09/travis-judge-te.html](http://sentencing.typepad.com/sentencing_law_and_policy/2008/09/travis-judge-te.html) (Sept. 12, 2008 at 17:08 EST) (last visited Apr. 17, 2010).

9. Cf. *infra* Part II.B (discussing Malthusian theory).

10. See *infra* note 71 and accompanying text (discussing quality of life and life expectancy).

11. See NOVA, *supra* note 6.

12. U.S. Census Bureau, International Data Base (IDB) – World Population: 1950-2050, <http://www.census.gov/ipc/www/idb/worldpopgraph.php> (last visited Mar. 1, 2009).

13. *Id.*

14. *Id.*

15. See AL GORE, *EARTH IN THE BALANCE: ECOLOGY AND THE HUMAN SPIRIT* 307 (1992).

16. See Science Daily, *IPCC Report: Responding to the Impacts of Human-caused Climate Change*, Apr. 10, 2007, <http://www.sciencedaily.com/releases/2007/04/070410133936.htm> (last visited Apr. 17, 2010); see also UNFCCC, *The Greenhouse Effect: Too Much of a Good Thing*, [http://unfccc.int/essential\\_background/feeling\\_the\\_heat/items/2903.php](http://unfccc.int/essential_background/feeling_the_heat/items/2903.php) (last visited Mar. 4, 2008).

17. See Science Daily, *supra* note 16; see generally United Nations Climate Change Conference, *Consequences of the Climate Change – COP15 United Nations Climate Change Conference*, Copenhagen 2009, <http://www.cop15.dk/en/menu/About-COP15/Background-to->

Global warming in turn threatens the availability of resources, especially food.<sup>18</sup> Thus, an increase in the industrialized human population has the twin effect of directly increasing demand for resources while at the same time indirectly diminishing resources by contributing to global warming.<sup>19</sup>

For these reasons, timeworn fears of mass starvation dating back to the Industrial Revolution have recently crept back into the public consciousness.<sup>20</sup> Such a disaster—one caused by a population outstripping its food supply—is called a “Malthusian Catastrophe.” In the Eighteenth Century, Thomas Malthus earned the name “the dismal science” for the study of economics which predicted that mass starvations were inevitable phenomena because the rate at which populations grow is inherently more rapid than that of the resources on which they rely.<sup>21</sup> Part II of this article will discuss Malthusian theory and explain its implications on demographic and technological changes. For the past three centuries, the prominence of Malthusian theory has ebbed and flowed. Recently, however, it is reemerging poignantly.

Several factors drive this latest anxiety of a Malthusian Catastrophe. The clearest is the soaring rate of recent population growth. Other factors, which stem from globalization, are not so readily apparent. In the world’s most populous nations, China and India, the relaxation of centuries old isolationist policies has resulted in a higher quality of life and a longer life expectancy. Fears of a Malthusian Catastrophe are fueled not only by these developments, but also by the backdrop of ever-worsening global warming.

Despite real fears of such a catastrophe, the global citizenry still maintains an abiding faith in technological salvation.<sup>22</sup> It expects technology to continue to increase the availability of resources. Thus, by relying on future scientific breakthroughs to stave off global warming and expand resource availability, the citizenry remains blissfully ignorant about the ominous possibility: what if technology cannot save the planet? The possibility has certainly been suggested in popular culture.<sup>23</sup> Where hope for technological salvation has been abandoned, policymakers can try only to tilt the naked balance of supply and demand. In that

---

the-Climate-Change-Convention-and-the-Kyoto-Protocol/Consequences-of-the-Climate-Changes/ (last visited Nov. 18, 2008).

18. Martin Parry, Co-Chair of Working Group II of the IPCC, Presentation to High-Level Meeting on Food Security, FAO, in Rome: Climate Change and World Food Security, June 4, 2009, <http://www.ipcc.ch/graphics/speeches/parry-rome-june-2008.pdf> (last visited Apr. 17, 2010).

19. Justin Lahart et al., *New Limits to Growth Revive Malthusian Fears*, WALL ST. J., Mar. 24, 2008, available at <http://online.wsj.com/article/SB120613138379155707.html>.

20. See generally THOMAS MALTHUS, AN ESSAY ON THE PRINCIPLES OF POPULATION (Geoffrey Gilbert ed., Oxford World Classics 1999) [hereinafter MALTHUS].

21. NEIL W. CHAMBERLAIN, BEYOND MALTHUS 3 (1970).

22. See James E. Krier & Clayton P. Gillette, *The Un-easy Case for Technological Optimism*, 84 MICH. L. REV. 405 (1985) (considering two separate and distinct applications of technology by two separate and distinct applications: (1) the role that technology plays in increasing the agricultural output of a given area of land, and; (2) the role that technology has yet to play in staving off global warming). See *infra* notes 233 and accompanying text.

23. *Id.* See, e.g., WALL-E (Walt Disney Studios 2008).

case—since the supply of resources is fixed—policymakers will be forced to work to reduce demand. Without much precedent to illuminate their task, policymakers will be forced to cobble proposals together in the dark.

Two current policies cast crude light on policymakers' task. The first example is China's quota system, popularly known as the "one-child" policy (hereinafter "one-child").<sup>24</sup> The one-child policy remains enshrined in the Chinese Constitution.<sup>25</sup> The most populous nation on Earth, China is home to approximately 1.3 billion people.<sup>26</sup> A one-child-per-family quota has been in place in China since 1979.<sup>27</sup> Tales of Chinese oppression and cruelty are legendary, but China's population policy is broad and enduring<sup>28</sup> enough to teach important lessons about population control.<sup>29</sup> Notably, the Chinese implemented the one-child policy only after an urgent surge in fears of a Malthusian Catastrophe. Part IV of this article will discuss how China's one-child policy can educate global policymakers. Although China's one-child policy is rightly admonished as an unjust imposition on human rights, in the event of global disaster, some aspects of it may provide important insight to policymakers.

The second policy example is the United Nations' population policy. The United Nations is currently the only entity capable of organizing a comprehensive global response to worldwide Malthusian Catastrophe. With its broad membership among nations and involvement with most of the issues that affect global population,<sup>30</sup> there is no other organization so positioned to direct the necessary international cooperation.<sup>31</sup> Moreover, the United Nations orchestrates the

24. See Robert Engelman, Worldwatch Institute, *What Happens if China's "One-child" Is Left Behind?*, Mar. 3, 2008, available at <http://www.worldwatch.org/node/5635>. China's "one-child" policy refers to the "one child per couple restriction" traditionally required by the National Population and Family Commission. Jim Yardley, *China to Reconsider One-Child Limit*, N.Y. TIMES, Feb. 29, 2008, available at [http://www.nytimes.com/2008/02/29/world/asia/29china.html?\\_r=1](http://www.nytimes.com/2008/02/29/world/asia/29china.html?_r=1).

25. XIAN FA art. 25, 49 (1982) (P.R.C.).

26. C.I.A. Website, *The World Factbook*, <https://www.cia.gov/library/publications/the-world-factbook/fields/2119.html?countryName=China&countryCode=ch&regionCode=eas&#ch> (last visited Mar. 16, 2010) (stating that as of July 2009, the population of China was approximately 1,338,612,968); see also Joseph Kahn, *The World: China's Time Bomb; The Most Populous Nation Faces a Population Crisis*, N.Y. TIMES, May 30, 2004, available at <http://query.nytimes.com/gst/fullpage.html?res=9507E6DC1E3EF933A05756C0A9629C8B63>.

27. Kahn, *supra* note 26.

28. While China may be the most widely recognized for its interest in population control and corresponding policies, in 1952, India was actually the *first* country to launch a national media campaign to raise awareness of the consequences that attend population growth. NOVA, *World in the Balance, Population Campaigns*, <http://www.pbs.org/wgbh/nova/worldbalance/campaigns.html> (last visited Mar. 1, 2009) [hereinafter NOVA, *World Balance*].

29. Engleman, *supra* note 24.

30. United Nations Member States, <http://www.un.org/members/list.shtml> (last visited Feb. 1, 2009).

31. Intergovernmental Panel on Climate Change (IPCC), *16 Years of Scientific Achievement in Support of the Climate Convention*, <http://www.ipcc.ch/pdf/10th-anniversary/anniversary->

international conferences at which policymakers and scientists assemble to shape global population policy.<sup>32</sup> Part IV of this article examines the framework of United Nation's population policy. Part V explores the lessons that China's one-child policy and the various U.N. policies hold for today's policymakers. Finally, the article recommends ways to implement those lessons in future policies.

## II. MALTHUSIAN CATASTROPHE

Malthusian theory posits that human populations inherently grow at a faster rate than the sources of food on which they rely.<sup>33</sup> To some extent, however, technology has modified the relationship between human populations and their food sources.<sup>34</sup> By expanding resource availability, technology has seemingly allowed humankind to evade the consequences of surpassing sustainable populations.<sup>35</sup> This has created an impression that populations can expand indefinitely. Nevertheless, the ecological principles that limit food production cannot be defied entirely,<sup>36</sup> and in the event of a global crisis, those food production limitations are likely to increase substantially.<sup>37</sup> Despite scientific breakthroughs that create the appearance that civilization can transcend nature, food production remains stubbornly bound by ecology.<sup>38</sup> Malthusian theory is predicated on the basic ecological principle that populations cannot exceed available resources. With the rise of globalization, anxiety about mass starvation caused by the global population outpacing food sources, the so-called Malthusian Catastrophe, has recently resurfaced.<sup>39</sup>

### A. *The Size of a Population is Inextricably Linked to the Amount of Resources Available*

The Malthusian economic theory was compelling enough that to inspire Darwin's theory of natural selection<sup>40</sup> and remains popular today.<sup>41</sup> The principles

brochure.pdf (last visited Mar. 1, 2009) [hereinafter IPCC Brochure].

32. See generally United Nations Population Fund (UNFPA), Summary of the ICPD Programme of Action, <http://www.unfpa.org/icpd/summary.cfm#intro> (last visited Mar. 1, 2008) [hereinafter Summary of the ICPD Programme of Action] (detailing the objectives of the International Conference on Population and Development following its 1994 Conference).

33. MALTHUS, *supra* note 20 at 13-22.

34. See Lahart, *supra* note 19.

35. See *id.*

36. See RUSSEL HOPFENBERG, HUMAN CARRYING CAPACITY IS DETERMINED BY FOOD AVAILABILITY (2003), <http://panearth.org/WVPI/Papers/CarryingCapacity.pdf> (last visited Apr. 17, 2010).

37. See Lahart, *supra* note 19.

38. See WILLIAM R. CATTON JR., MALTHUS: MORE RELEVANT THAN EVER *in* THE CASE FOR FEWER PEOPLE: THE NPG FORUM PAPERS 579 (1998).

39. *Id.*

40. Nicholas Wade, *In Dusty Archives, A Theory of Affluence*, N.Y. TIMES, Aug. 7, 2007, available [at http://www.nytimes.com/2007/08/07/science/07indu.html?\\_r=1&bl&ex=1186804800&en=fbe25403514c47d5&ei=5087%0A&oref=slogin](http://www.nytimes.com/2007/08/07/science/07indu.html?_r=1&bl&ex=1186804800&en=fbe25403514c47d5&ei=5087%0A&oref=slogin); see also Sean Hearn, *Competing Values: Taking a Broad View on the Narrowing Conservation Regime of the 1982 United Nations Convention on*

underlying the theory are simple: (1) people require food; and (2) human populations increase in size faster than food becomes available.<sup>42</sup> In spite of its apparent simplicity, Malthusian theory has menacing implications. It suggests that unless some other factor reduces the population or expands food production, people will starve to death until population recedes to a level that can be supported by available food sources.<sup>43</sup>

At the core of Malthusian theory is the disparity between the rate at which populations grow and the rate of growth of the resources on which those populations rely.<sup>44</sup> Malthus posits that human populations “increase in a geometric ratio,”<sup>45</sup> meaning that the size of each population is held in check by the fixed amount of food that is available to it. To increase food production, a given population must cultivate more land.<sup>46</sup> Since the surface area of land is two-dimensional, food production increases at a merely arithmetic rate<sup>47</sup> until all fertile land is occupied, at which point continued agriculture only diminishes yields further.<sup>48</sup> Thus, the rate at which agricultural yield increases is slower than the geometric rate at which populations grow.<sup>49</sup> Malthus illustrated up the disparity between the rate of growth of population and that of agricultural yield by stating:<sup>50</sup> “the human species . . . increase[s] in the ratio - 1, 2, 4, 8, 16, 32, 64, 128, 256, 512, and subsistence as - 1, 2, 3, 4, 5, 6, 7, 8, 9, 10.”<sup>51</sup>

***B. Technology Can Alter, but Not Eliminate, the Correlation Between the Size of a Population and Available Food***

One way that a human population may temporarily defy the grasp of Malthusian mathematics is to expand production by incorporating technology into the agricultural process. Thus, while the proportion between population size and its requirements for food seems inescapable, it has not gone unchallenged.<sup>52</sup> Even

---

*the Law of the Sea*, 16 AM. U. INT’L L. REV. 177, 189 (2000).

41. See generally MALTHUS, *supra* note 20.

42. See *id.* at viii.

43. *Symposium On Population Law: From Malthus To The Millennium: Population Law And Policy*, 27 LEWIS & CLARK ENV’T L. L. 1091, 1092 (1997) (“The pressures of an expanding population upon the earth’s ecosystems will lead to disaster, and ultimately, lower population unless action is taken to reduce environmental decline.”).

44. See MALTHUS, *supra* note 20, at 15-22.

45. *Id.* at 13.

46. *Id.* at 16-17.

47. *Id.* at 16.

48. *Id.* at 16-17.

49. *Id.*

50. See *id.* at 17.

51. Applying these principles, Malthus forecasted that “[i]f the United States of America continue[s] increasing, which they certainly will do, though not with same rapidity as formerly, the Indians will be driven further and further back into the country, till the whole race is ultimately exterminated, and the territory is incapable of further expansion.” *Id.* at 16-17.

52. See Lahart, *supra* note 19 (quoting a statistician who argues that “smartness will outweigh the extra resource use”).

if the entire surface area of a given piece of land is cultivated, agricultural yield can still be increased by improving the output of each square foot through human ingenuity,<sup>53</sup> an aspect that Malthus's critics are apt to point out.<sup>54</sup> Such critics take the position that “*exponential technological growth* will allow [human populations] to expand resources ahead of exponentially increasing demands.”<sup>55</sup>

To some extent, this view has proven true. The process for synthesizing ammonia was arguably the most important invention of the twentieth century.<sup>56</sup> However, the production of ammonia is not the reason for the importance of this process. Rather, the process is significant because of the byproduct that it yields: nitrogen.<sup>57</sup> Even though plants cannot grow without nitrogen,<sup>58</sup> very few natural processes produce it.<sup>59</sup> For example, manure is a prized fertilizer precisely because it is high in nitrogen content.<sup>60</sup> Accordingly, the advent of synthetic ammonia—but mostly its nitrogen byproduct—was remarkable for its dramatic enhancement of agricultural yield.<sup>61</sup> Consequently, agriculture is able to support populations of unprecedented size.<sup>62</sup> By one estimate, nitrogen-infused fertilizers derived from the synthetic ammonia process nurture half of the global agricultural yield.<sup>63</sup> For a modern-day example of the dramatic impact of technology on agricultural output, one need only visit the website of agribusiness giant, Monsanto Inc., which boasts that its fertilizer products:

[I]ncrease productivity or reduce cost by increasing yield, improving protection from insects and disease, or increasing their crops' tolerance to heat, drought, and other environmental stress. For many farmers, especially small-scale growers, our products help improve their lives by helping them produce more while conserving more time and inputs.<sup>64</sup>

---

53. *Id.*

54. See Wade, *supra* note 40 (arguing that the Industrial Revolution represented “the first escape from the Malthusian trap”); see also FRIEDRICH ENGELS, OUTLINES OF A CRITIQUE OF POLITICAL ECONOMY (1844), reprinted in MARX AND ENGELS ON MALTHUS, at 57-58 (Ronald L. Meek ed., International Publishers 1954) (arguing that “productivity of the land can be infinitely increased by the application of capital, labour and science”).

55. James E. Krier & Clayton P. Gillette, *The Un-Easy Case for Technological Optimism*, 84 MICH. L. REV. 405, 407 (1985-1986) (emphasis in original) (quoting W. OPHULS, ECOLOGY AND THE POLITICS OF SCARCITY 117 (1977)).

56. Lindsey Grant, *China as an “Emerging” Nation: What It Means for the Rest of Us*, in THE CASE FOR FEWER PEOPLE: THE NPG FORUM PAPERS 464, 464 (Lindsey Grant ed., Seven Locks Press 2006).

57. *Id.*

58. *Id.* at 465.

59. *Id.* at 464-65 (“There are only three natural atmospheric processes for converting atmospheric nitrogen, which is locked up in N<sub>2</sub> molecules, into a form usable by plants and animals: falling meteors, ozonization and ionization by lightning. The only biotic process is the creation of ammonia by various bacteria . . .”).

60. See *id.* (discussing the importance of nitrogen in modern farming techniques).

61. *Id.*

62. Grant, *supra* note 56, at 465.

63. *Id.*

64. Monsanto ~ Our Products ~ Benefits of Our Products, <http://www.monsanto.com/products/benefits.asp> (last visited Mar. 1, 2009) (emphasis added).



Agribusinesses represent only the latest human project that strives to surmount the ancient problem of food scarcity. Recently, scientists in the academic sector have enjoyed success in increasing rice yields in poor agricultural regions by genetically engineering a flood-tolerant strain of rice.<sup>65</sup> Thus, human ingenuity is enhancing agricultural yields, and more people are being fed as a result.<sup>66</sup>

Regardless of technological advances, food production remains bound by ecological principles.<sup>67</sup> While food production has increased because of human ingenuity,<sup>68</sup> it remains limited by the laws of nature.<sup>69</sup> The potential to produce food is, therefore, governed by natural conditions.<sup>70</sup> Consequently, where conditions hostile to food production prevail, the availability of food will decline.<sup>71</sup> In the event of either severe climate change or sudden cataclysm,<sup>72</sup> agricultural yield is likely to decrease.<sup>73</sup> In the grim scenario assumed by this article, if such conditions reign, on an Earth populated by billions of people, sudden food scarcity would trigger the starvation of millions.

---

65. Peter Ornstein, *Fighting Hunger with Flood-Tolerant Rice*, CNN, Feb. 5, 2009, <http://www.cnn.com/2009/TECH/science/01/29/waterproof.rice/index.html> (last visited Apr. 17, 2010).

66. *Id.*

67. See HOPFENBERG, *supra* note 36, at 110 (suggesting that food production remains limited by ecological resources); see also CATTON, *supra* note 38, at 576-79 (arguing that many other resources besides food are required to sustain the human population).

68. The following is an example of an animal population suffering for lack of human ingenuity: "In 1944, 29 reindeer were imported onto St. Matthew Island in the Bering Sea. Specialists had calculated (quite correctly) that the island could support between 1600 and 2300 reindeer, and by 1957 the population had grown to 1350. But by 1963, with no natural controls or predators, the population had soared to 6000, and in the next three years, this population exhausted the island's food resources and crashed, leaving only 42 specimens clinging precariously to life." Daniel Quinn, *A True Story Illustrating What It Means to Exceed Carrying Capacity* (1996), [http://www.ishmael.org/Education/Science/carry\\_capacity.cfm](http://www.ishmael.org/Education/Science/carry_capacity.cfm) (last visited Apr. 17, 2010).

69. The human population of Rapanui on tiny Easter Island befell the fate of the St. Matthew Island reindeer. Peter Tyson, *Out of House and Home*, NOVA, <http://www.pbs.org/wgbh/nova/worldbalance/easter.html> (last visited Mar. 1, 2009).

70. See HOPFENBERG, *supra* note 36, at 109 (attempting to measure global food availability).

71. See Parry, *supra* note 18 (connecting decreased food production to negative ecological events).

72. In 2008, the same factors in play on St. Matthew and Easter Islands, *supra* notes 64-65, drove the political leader of the Maldives islands to seek to purchase land for future re-colonization after the anticipated "sinking" of the Maldives. Sumon Chakrabarti & Saeed Ahmed, *Sinking Island's Nationals Seek New Home*, CNN, Nov. 11, 2008, <http://www.cnn.com/2008/WORLD/asiapcf/11/11/maldives.president/index.html?iref=mpstoryview> (last visited Apr. 17, 2010).

73. See, e.g., Shaobing Peng et al., *Rice Yields Decline with Higher Night Temperature from Global Warming*, 101 PROC. OF THE NAT'L ACAD. OF SCI. 9971, 9971 (1997), available at <http://www.pnas.org/content/101/27/9971.full.pdf+html?sid=dbc8272d-d56f-429e-a8b7-20800c329fc3> ("This report provides direct evidence of decreased rice yields from increased nighttime temperature associated with global warming.").

### C. *Renewed Fears of Malthusian Catastrophe*

Recently, anxiety has reemerged that a mass starvation will occur.<sup>74</sup> First, the world's two most populous nations, China and India, have experienced a meteoric rise in their quality of life,<sup>75</sup> resulting in an explosion of the global demand for resources.<sup>76</sup> Second, Malthusian Catastrophe has been averted historically by satisfying existing demands with new supplies.<sup>77</sup> For example, once demand outstripped the supply of timber in eighteenth-century England, industry satisfied its voracious appetite for energy by switching to coal.<sup>78</sup> Given the present state of global affairs, however, the emergence of climate change has made such a simple transition infinitely more complicated. Since coal is widely recognized as a contributor to greenhouse gases, climate change places considerable constraints on its use and the use of other technologies that—in the absence of climate crisis—would be viable substitutes for threatened resources. Finally, people are living longer than ever.<sup>79</sup> As a result, there are more people than ever before,<sup>80</sup> all of whom are consuming more resources than ever.<sup>81</sup>

The result is a dangerous amount of resource consumption that Dr. Martin Parry, a leading scientist of the United Nations' Intergovernmental Panel on Climate Change ("IPCC") summed up:<sup>82</sup> "climate change, both through its impacts and our policy has, in combination with more important factors such as increasing demand and stagnating production, had a global impact of availability of food."<sup>83</sup> Recently, the world's foremost climate scientists have urged that climate change has been accelerating at a greater pace than previously estimated.<sup>84</sup> Furthermore,

---

74. Lahart, *supra* note 19; *see also* The Club of Rome: The Story of the Club of Rome, <http://www.clubofrome.org/eng/about/4/> (last visited Nov. 10, 2008) (expressing concerns about "unlimited resource consumption in an increasingly interdependent world").

75. Lahart, *supra* note 19.

76. *Id.* Lahart notes that:

As the world grows more populous—the United Nations projects eight billion people by 2025, up from 6.6 billion today—it also is growing more prosperous. The average person is consuming more food, water, metal and power. Growing numbers of China's 1.3 billion people and India's 1.1 billion are stepping up to the middle class, adopting the high-protein diets, gasoline-fueled transport and electric gadgets that developed nations enjoy. The result is that demand for resources has soared. If supplies don't keep pace, prices are likely to climb further, economic growth in rich and poor nations alike could suffer, and some fear violent conflicts could ensue.

*Id.*

77. *See id.* (noting the historical shift to new resources when old ones had been exhausted).

78. *Id.*

79. Diana D.M. Babor, *Population Growth and Reproductive Rights in International Human Rights Law*, 14 CONN. J. INT'L L. 83, 86 (1999).

80. *Id.*

81. Lahart, *supra* note 19.

82. For more on the IPCC, *see infra* notes 195-205 and accompanying text.

83. Parry, *supra* note 18.

84. The Heat Is On – Climate Change Gathers Pace Faster than Scientists Expected, World Wildlife Fund (Oct. 20, 2008), <http://wwf.org.au/news/climate-change-gathers-pace-faster-than-scientists-expected/> (last visited Apr. 17, 2010); *see also* TINA TIN, WWF, CLIMATE CHANGE:

the latest research indicates that climate change will have long reaching global impacts.<sup>85</sup> Former Vice President Al Gore<sup>86</sup> sounded the alarm at the 2008 Democratic National Convention:

Many scientists predict that the entire north polar ice cap may be completely gone during summer months in the first term of the next president. Sea levels are rising, fires are raging, storms are stronger. Military experts warn us our national security is threatened by massive waves of climate refugees destabilizing countries around the world, and scientists tell us the very web of life is endangered by unprecedented extinctions. We are facing a planetary emergency which, if not solved, would exceed anything we've ever experienced in the history of humankind.<sup>87</sup>

Already, many countries around the world suffer from food shortages.<sup>88</sup> If an advanced planetary emergency strikes, these shortages could worsen and Malthusian Catastrophe will ensue.

### III. CHINA'S ONE-CHILD POLICY

Since its implementation in 1979, China's one-child policy has prevented the birth of an estimated 250 million Chinese children, subverting the individual's interests to those of the collective.<sup>89</sup> The policy was formally implemented after Deng Xiaoping succeeded Mao Zedong.<sup>90</sup> Mao's policies had the consequence of

FASTER, STRONGER, SOONER: A EUROPEAN UPDATE OF CLIMATE SCIENCE (2008), [http://assets.panda.org/downloads/wwf\\_science\\_paper\\_october\\_2008.pdf](http://assets.panda.org/downloads/wwf_science_paper_october_2008.pdf).

85. *Expect 1,000-year Climate Impacts, Experts Say*, MSNBC, Jan. 26, 2009, <http://www.msnbc.msn.com/id/28861757/> (last visited Apr. 17, 2010) ("Even if the world can cap carbon dioxide emissions tied to global warming, expect to see droughts and sea level rise that span centuries, not just decades . . .").

86. Former Vice President Al Gore and the IPCC shared the Nobel Peace Prize for their contributions to global climate science. R K Pachauri, Chairman, IPCC, Acceptance Speech for the Nobel Peace Prize Awarded to the IPCC (Dec. 10, 2007), *available at* <http://www.ipcc.ch/graphics/speeches/nobel-peace-prize-oslo-10-december-2007.pdf>.

87. The Honorable Albert Gore, Former Vice President of the United States, Address at the Democratic National Convention (Aug. 28, 2008) (transcript available at <http://www.npr.org/templates/story/story.php?storyId=94086892>).

88. *See, e.g.,* Alexi Mostrous, *Haitians Storm Presidential Palace over Food Shortages*, TIMES (London) ONLINE, Apr. 9, 2008, <http://www.timesonline.co.uk/tol/news/world/article3714834.ece> (last visited Apr. 17, 2010); Stephen Lendman, *Global Food Crisis: Hunger Plagues Haiti and the World*, Centre for Research on Globalization (Apr. 21, 2008), <http://www.globalresearch.ca/index.php?context=va&aid=8754> (last visited Apr. 17, 2010).

89. Penny Kane & Ching Y. Choi, *China's One Child Policy*, 319 BRIT. MED. J. 992, 994 (1999), *available at* <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1116810/>.

90. Susan Greenhalgh, *Missile Science, Population Science: The Origins of China's One-Child Policy*, 182 THE CHINA Q. 253, 258-61 (2005), *available at* <http://journals.cambridge.org/action/displayFulltext?type=1&fid=314404&jid=&volumeId=&issueId=&aid=314403>.

creating only one bastion of physical science: military technology.<sup>91</sup> Unlike Mao, whose policies devastated the serious study of the physical sciences,<sup>92</sup> Deng favored the practical over the philosophical.<sup>93</sup> Thus, Deng was predisposed to support anti-democratic measures if they brought about the desired result.<sup>94</sup> As the issue of overpopulation came to a boil, a military technologist formulated a theory compatible with the practical results that Deng desired.<sup>95</sup> This theory ultimately became the one-child policy.<sup>96</sup> The Deng regime imposed this policy on the Chinese people in 1979, and defended it by invoking the reasoning behind the Malthusian Catastrophe.<sup>97</sup> Proponents of the policy argued that the one-child policy's effects were consistent with human rights because the failure to bring population under control would cause mass starvation.<sup>98</sup> In mathematical terms, the engineers of the policy projected that if fertility remained at then-current levels, China's population would top four billion in 2080 and would keep growing.<sup>99</sup> Thus, harsh enforcement techniques were justified as a necessary means for meeting policy goals.<sup>100</sup> Ultimately, the one-child policy has been very effective at limiting birthrates in urban areas, but generally unsuccessful in rural areas where enforcement has proven more difficult.<sup>101</sup>

#### A. *The Years Prior to One-Child*

In the latter half of the twentieth century, prevailing social and economic norms created the perception that a population control policy was necessary.<sup>102</sup> Until about 1958, the great majority of Chinese citizens were farmers strewn along the countryside.<sup>103</sup> Their families were large<sup>104</sup> and their lives were simple.<sup>105</sup>

---

91. *Id.* at 254.

92. *Id.* at 254-55.

93. *Id.*

94. See Discovering China: Movers & Shakers, <http://library.thinkquest.org/26469/movers-and-shakers/deng.html> (last visited Feb. 28 2009) (noting that, in regard to domestic politics, Deng's practical attitude is reflected by his famous cat-ism: "It doesn't matter whether the cat is black or white, as long as it catches mice.").

95. Greenhalgh, *supra* note 90, at 254-55.

96. *Id.*

97. Elizabeth Spahn, *Feeling Grounded: A Gendered View of Population Control*, 27 ENV'T'L. L. 1295, 1299 (1997).

98. *Id.* (quoting Sharon K. Hom, *Female Infanticide in China: The Human Rights Specter and Thoughts Toward (An) Other Vision*, 23 COLUM. HUM. RTS. L. REV. 249, 269 (1992)).

99. Greenhalgh, *supra* note 90, at 264.

100. Therese Hesketh, Ph.D. et al., *The Effect of China's One-Child Family Policy after 25 Years*, 353 NEW ENG. J. MED. 1171, 1171-72 (2005) (enforcement techniques included "economic incentives for compliance and substantial fines, confiscation of belongings, and dismissal from work for noncompliance"), available at <http://content.nejm.org/cgi/content/full/353/11/1171>.

101. *Id.* at 1171.

102. Kane & Choi, *supra* note 89, at 992-93.

103. The Birth of Modern China, <http://condensedchina.com/china4.html> (last visited, Mar. 1, 2009).

104. Barbara Stark, *Baby Girls from China in New York: A Thrice-Told Tale*, 2003 UTAH L.

Families prized sons especially for their labor and because brides traditionally left the household upon marriage to join their husband's family.<sup>106</sup> This also meant that sons were the only reliable source of care for elderly parents.<sup>107</sup> Because families' livelihoods depended on manpower, the more children a family produced, the more labor it had at its disposal.<sup>108</sup>

The ascent to power of Mao Zedong's Chinese Communist Party ("CCP") in 1949 completely transformed the cultural and political environment.<sup>109</sup> Initially, Mao and the CCP enjoyed the ideological and military support of the Soviet Union, but by 1958 Moscow's support for the CCP had waned.<sup>110</sup> Sensing the need to stimulate the domestic economy, Mao instituted the Great Leap Forward. The purpose of this initiative was to increase production "by reorganizing the peasantry into large-scale communes and mobilizing society to bring about technological revolution in agriculture."<sup>111</sup> Instead, the Great Leap Forward was a spectacular failure.<sup>112</sup> It triggered a massive famine, from 1958-1961, during which approximately thirty million people may have starved to death.<sup>113</sup>

Mao's regime also hobbled the serious academic study of the sciences.<sup>114</sup> Fearful that bourgeois elements would overtake communism, Mao persecuted any

REV. 1231, 1238 (2003).

105. *See id.* at 1238-39.

106. *Id.*; *see also* Kane & Choi, *supra* note 89, at 993 (stating that sons had always been viewed as essential in rural China).

107. *See* Stark, *supra* note 104, at 1238-39 (stating that sons were their parents' old-age insurance); *see also* Kane & Choi, *supra* note 89, at 993 (remarking that those without a pension "needed sons to support them in old age").

108. *See id.* at 1238-39.

109. The Birth of Modern China, *supra* note 103.

110. *See id.*; Federation of American Scientists, Nuclear Weapons – China Nuclear Forces, <http://www.fas.org/nuke/guide/china/nuke/index.html> (last visited Feb. 5, 2010) [hereinafter Federation of American Scientists] ("When Sino-Soviet relations cooled in the late 1950s and early 1960s, the Soviet Union withheld plans and data for an atomic bomb, abrogated the agreement on transferring defense technology, and began the withdrawal of Soviet advisers in 1960.").

111. The Birth of Modern China, *supra* note 103.

112. *See generally*, Xizhe Peng, *Demographic Consequences of the Great Leap Forward in China's Provinces*, Vol. 13 No. 4 POPULATION AND DEV. REV. 639, 649 (1987), available at <http://www.jstor.org/stable/1973026?cookieSet=1> (showing that "[C]hina's 1959-61 famine was a consequence of a combination of the decline in grain production, entitlement failure, and changes in consumption patterns, all of which were directly connected with the Great Leap Forward.").

113. *Id.* at 648. Estimates of the number of excess deaths in China during the Great Leap Forward range from 16.5 million people to 29.5 million people.

114. JACQUES GERNET, A HISTORY OF CHINESE CIVILIZATION SECOND EDITION 677 (Cambridge Univ. Press 1999).

(noting that Mao closed schools and universities "for years on end" during the Cultural Revolution); Greenhalgh, *supra* note 90, at 258 (describing how the Red Guards ransacked scientist Song Jian's home, and how he later enjoyed "special state protection" when he was deemed indispensable to national defense efforts).

intellectual who was thought to be counter-revolutionary.<sup>115</sup> Furthermore, China's military defense sector attracted the most talented scientists.<sup>116</sup> As a result, "[d]uring the Maoist decades . . . Chinese science was virtually all military science."<sup>117</sup> This impoverished the collective academic study of the physical sciences, such as mathematics and physics. Moreover, since Mao's isolationist policies put international resources out of the reach of Chinese scholars, they had no choice but to acquiesce.<sup>118</sup>

At the same time, the CCP's fear of an attack by the West caused it to ramp up military spending.<sup>119</sup> It committed substantial resources to the research and development of military technology.<sup>120</sup> Thus, only one sector, a cadre of elite strategic weapons scientists, enjoyed privileged access to international scholarship and state-of-the-art technology.<sup>121</sup> Its work became intertwined with politics.<sup>122</sup> While defense projects developed impressively under the supervision of these privileged few, the widespread study of the physical sciences withered. For example, while approximately thirty million people were starving to death due to the botched management of Great Leap Forward,<sup>123</sup> China dedicated considerable resources toward the acquisition of a nuclear weapon,<sup>124</sup> detonating its first atom bomb in 1964.<sup>125</sup> Despite the debacle of the Great Leap Forward and a tumultuous political climate, Mao remained in power until his death in 1976.<sup>126</sup> Ultimately, the policies that he set in motion laid the groundwork for implementation of the one-child policy.

### ***B. How Well It Catches Mice: Regime Change Set the Stage for One-Child***

In 1978, Deng Xiaoping became the de facto leader of the CCP and set out immediately to quell national concerns by restructuring social policy.<sup>127</sup> With the calamity of the Great Leap Forward and the ensuing period of upheaval fresh in the national psyche, Deng looked first to reform economic practices.<sup>128</sup> With respect to domestic issues, he did so with an unyielding pragmatism that had been completely absent during Mao's reign.<sup>129</sup> Under Mao, unqualified but "red" CCP party

---

115. GERNET, *supra* note 114, at 674.

116. Greenhalgh, *supra* note 90, at 257.

117. *Id.* at 254.

118. *See id.* at 257 (noting that military scientists were privileged partially because they had access to foreign literature and data).

119. Federation of American Scientists, *supra* note 110.

120. Greenhalgh, *supra* note 90, at 254.

121. *Id.* at 257.

122. *Id.* at 260.

123. Peng, *supra* note 112, at 648.

124. *See* Federation of American Scientists, *supra* note 110.

125. *Id.*

126. GERNET, *supra* note 114, at 677.

127. *Id.* at 678 (stating "[h]e never officially occupied a *formal* position of leadership. Nevertheless, he wielded the enormous power commensurate with that of a head of state.").

128. Discovering China: Movers & Shakers, *supra* note 94.

129. *See id.*

members were frequently promoted to positions over more deserving nonmembers. By contrast, Deng's telling motto was "[i]t doesn't matter whether the cat is black or white, as long as it catches mice."<sup>130</sup> He thought that China's economic woes were linked to its population growth, and was therefore a "strong advocate of population control."<sup>131</sup>

By the late 1970s, China's population was hovering around one billion,<sup>132</sup> and the threat that it might explode justified drastic actions. China's birthrate was particularly worrisome. The fertility rate is defined as "the mean number of children born per woman."<sup>133</sup> Generally, populations remain constant at a fertility rate of 2.1.<sup>134</sup> In 1970, the fertility rate in China was a stupefying 5.81.<sup>135</sup>

Meanwhile, catastrophe loomed: "China was home to a quarter of the world's people, who were occupying just [seven] percent of [the] world's arable land. Two thirds of the population was under the age of 30 years, and the baby boomers of the 1950s and 1960s were entering their reproductive years."<sup>136</sup> In response, the CCP seized the authority to regulate the population in March of 1978 and amended the Chinese constitution to reflect its new power.<sup>137</sup> Thereafter, the only unanswered question was how to exercise that authority.<sup>138</sup>

The weeklong National Symposium on Population Theory, which convened in Chengdu, China, addressed this question in December of 1979.<sup>139</sup> Prominent theorists and policymakers assembled from around the country to shape policy on the increasingly worrisome subject of overpopulation.<sup>140</sup> Notably, because Mao's longstanding policies had impoverished the serious study of the physical sciences, the vast majority of the delegates were social scientists: sociologists, demographers, or psychologists.<sup>141</sup> Abstract socio-philosophical principles dominated their presentations, which generally lacked the mathematical precision that physical sciences embrace.<sup>142</sup> The social scientists presented esoteric theories, relying largely on Marxist philosophical exercises.<sup>143</sup> The realities of this intellectual landscape ultimately played a crucial role in the adoption of the one-child policy.

---

130. *Id.* (interpreting Deng's motto as "feed the people, no matter what it takes.").

131. Greenhalgh, *supra* note 90, at 260.

132. *Id.*

133. Hesketh, *supra* note 100, at 1172.

134. Stark, *supra* note 104, at 1242.

135. *Id.*

136. Hesketh, *supra* note 100, at 1171.

137. *See* Greenhalgh, *supra* note 90, at 260.

138. *Id.*

139. *Id.* at 269.

140. *Id.*

141. *See id.*

142. *Id.*

143. *See id.* at 261-62.

One of the delegates, Song Jian, was a strategic weapons expert and a member of the privileged military elite.<sup>144</sup> Compared with his colleagues' abstract theories, his presentation was refreshingly straightforward. Instead of philosophical arguments, he applied models derived from complex missile systems methodologies to the population issue.<sup>145</sup>

Drawing techniques and logics from [authorities on population theory outside China] and from defen[s]e science, [Song] redefined China's population issues in natural and physical science terms. The result was a more urgent problem, a more radical solution, and a more top-down, big-push strategy of enforcement than had been considered before.<sup>146</sup>

At the core of his presentation was a graph that pointedly illustrated the future of China's population under each of several fertility rates. The steep slope of the line purporting to project population growth at the 1975 birthrate was most alarming. It indicated that by 2080, China's population would exceed four billion.<sup>147</sup>

Song's membership in the prestigious military elite, coupled with the arithmetic precision of his presentation, made his argument irresistible. Not only did Song's academic pedigree entitle him to an unrivaled level of respect, but the military efficiency of his theory appealed deeply to the pragmatic intellectual climate Deng fostered.<sup>148</sup> In a short period of time, Song's theory was elevated to authority and ultimately formed the scientific basis underlying China's population policy.

### ***C. Ruthless Enforcement Justified with Threats of Malthusian Catastrophe***

The policy consisted of several regulations designed to govern the approved size of families.<sup>149</sup> Generally, regulations "restrict[] . . . family size, late marriage and childbearing, and the spacing of children (in cases in which second children are permitted)."<sup>150</sup> The State Family Planning Bureau ("SFPB") was, and remains, tasked to oversee and enforce them nationally.<sup>151</sup> On the local level, family-planning committees generate and enforce their own plans of implementation.<sup>152</sup> The SFPB makes exceptions to its mandate of one-child families in extraordinary circumstances, such as when a first child has a disability.<sup>153</sup> The policy has been

144. *Id.* at 257-58.

145. *Id.* at 266 ("From a mathematical point of view, missile control techniques lent themselves readily to population control problems, because the trajectories of missiles and populations charted over time followed similar lines, and because the optimization problems for controlling the two objects took functionally similar forms.")

146. *Id.* at 263.

147. *Id.* at 264.

148. *Id.* at 271.

149. Hesketh, *supra* note 100, at 1171.

150. *Id.*

151. *Id.*

152. *Id.*

153. *Id.*



enforced with varying levels of strictness, with the harshest level taking place in urban centers.<sup>154</sup>

With the introduction of the measure in 1979, the CCP set an ambitious national goal of limiting China's population to 1.2 billion people by 2000.<sup>155</sup> In striving to meet its goal, the CCP employed ruthless enforcement with little concern for its impact on any individual or family. Enforcement techniques have run the gamut between (mere) intrusion and outright cruelty: "incentives; onerous fines on excess children; forced sterilizations; abortions; the refusal to register 'unauthorized' children; and oppressive campaigns in which committees would monitor women's menstrual cycles and visit women who became pregnant, sometimes harassing them for hours until they agreed to abortions."<sup>156</sup> A flurry of propaganda complemented the CCP's enforcement techniques. The CCP commissioned "ad campaigns promoting 'one child' [that] link[ed] the policy to prosperity and good Communist citizenship. By showing happy single female children, many of the ads also seemed to respond subtly to the traditional preference for boys."<sup>157</sup>

The logic of Song's theory seemed to require harsh enforcement, and once it was implemented, he and the CCP defended it rigorously. He supported his proposals by "painting frightening scenarios of a nation with no food to eat, no water to drink and no land to till, and insisting that there was 'no other way' to avert that disaster than a one-child-for-all policy."<sup>158</sup>

The CCP took a similar stance. Using Malthusian rhetorical techniques, the Chinese government presented its choices as a dichotomy: either it "implement[ed] the one child policy or [it] allow[ed] blind growth in births."<sup>159</sup> Framing the issue this way created a choice between enabling children to grow up leading healthy lives and allowing overpopulation to create food and clothing shortages and premature deaths.<sup>160</sup> Thus, the Chinese government's choice of the former option seemed more humane and attuned to human rights.<sup>161</sup>

In later years, when the one-child policy came under fire internationally, Chinese officials were quick to point to sources of international law that reserved

---

154. *Id.*

155. *Id.* at 1171-72.

156. Stark, *supra* note 104, at 1241 (citations omitted).

157. NOVA, World Balance, *supra* note 28. For an illuminating relic of the CCP's campaign to sway public opinion, see <http://www.pbs.org/wgbh/nova/worldbalance/camp-04.html>; see also Hesketh, *supra* note 100, at 1173 (depicting a billboard touting the one-child policy that reads: "[t]here's no difference between having a girl or a boy – girls can also continue the family line").

158. Greenhalgh, *supra* note 90, at 272. Malthusian principles reverberate clearly in Song's appeals.

159. Spahn, *supra* note 97, at 1299.

160. *Id.*

161. *Id.*

for sovereign nations to the right to regulate their populations for the “attainment of national goals.”<sup>162</sup>

#### **D. Impact**

By most accounts, the impact of the one child policy on the Chinese population has been enormous and is particularly evident from a purely mathematical standpoint. Though the Chinese population reached 1.27 billion in the year 2000, exceeding the government’s target of 1.2 billion,<sup>163</sup> other indicia have reflected the policy’s effectiveness. The CCP claims to have prevented between 250 and 300 million births.<sup>164</sup> In 2004, the national birthrate was 1.7 – specifically, it was at 1.3 in urban regions and 2.0 in rural regions.<sup>165</sup>

However, the policy has had unintended social consequences. For instance, it has led to a pronounced disparity in the sex ratio.<sup>166</sup> The sex ratio is “defined as the proportion of male live births to female live births.”<sup>167</sup> As a result of the cultural preference for males, many females were aborted, or simply “disappeared.” There is also an increased ratio of old-age dependency. The “lack of adequate pension coverage in China means that financial dependence on offspring is still necessary for approximately seventy percent of elderly people.”<sup>168</sup>

Some experts are reluctant to ascribe such widespread impact to the one-child policy, instead attributing demographic changes to social factors in play before its inception:

The most dramatic decrease in the rate actually occurred before the policy was imposed. Between 1970 and 1979, the largely voluntary “late, long, few” policy, which called for later childbearing, greater spacing between children, and fewer children, had already resulted in a halving of the total fertility rate, from 5.9 to 2.9. After the one-child policy was introduced, there was a more gradual fall in the rate until 1995, and it has more or less stabilized at approximately 1.7 since then. In addition, many countries have had substantial declines in fertility during the past 25 years, and China’s neighbors in East Asia have some of the lowest total fertility rates in the world: 1.04 in Singapore, 1.38 in Japan, and 0.91 in the Hong Kong Special Administrative Region. Even allowing for the fact that these countries are more developed and urbanized than China, the parallels are hard to ignore. It is reasonable to speculate that there would have been a further decline in China’s total fertility rate had the voluntary policy of the 1970s continued.<sup>169</sup>

---

162. See Babor, *supra* note 79, at 117 (noting China’s citation of Recommendation 13 of the United Nations’ 1984 Mexico City Plan of Action in defense of one-child).

163. Hesketh, *supra* note 100, at 1172.

164. *Id.*

165. *Id.*

166. *Id.*

167. *Id.*

168. *Id.* at 1174.

169. *Id.* at 1172 (citations omitted).

### ***E. Lessons for the World***

China's policy is instructive, not for its substance or enforcement methods, but because of its value as a cautionary tale. It teaches that when fears of Malthusian Catastrophe prevail, deeply Machiavellian measures appear defensible. The mere *perception* of a looming Malthusian Catastrophe corrodes the process for formulating population policy and undermines considerations of human rights. Thus, for today's policymakers to make measured, reasoned decisions, they must do so in a climate where such anxieties are contained.

## **IV. THE UNITED NATIONS IS POISED TO RESPOND TO A MALTHUSIAN CATASTROPHE**

The United Nations is the only entity capable of organizing a comprehensive global response to a worldwide Malthusian Catastrophe. With its broad membership among nations and involvement with most of the issues that affect global population,<sup>170</sup> there is no other organization so positioned to direct the necessary international cooperation.<sup>171</sup> Moreover, the United Nations orchestrates the international conferences at which policymakers and scientists assemble to shape global population policy.<sup>172</sup>

In 1994, at one such conference, 179 delegate nations ratified the United Nations' International Conference on Population and Development Programme of Action ("ICPD Programme"), as the United Nations population policy.<sup>173</sup> The ICPD Programme has remained the United Nations' active population policy ever since,<sup>174</sup> although it is difficult to enforce and assess because it demands only voluntary state compliance. Furthermore, the United Nations is the only entity capable of responding to a Malthusian Catastrophe due to its central role in the identification and monitoring of relevant factors, especially climate change.<sup>175</sup> The world's foremost climatologists are affiliated with, and organized through, the United Nations.<sup>176</sup> The United Nations also controls the channels through which information about key factors travels to reach global policymakers.<sup>177</sup>

---

170. See Press Release, Department of Public Information, United Nations Member States, ORG/1469 (July 3, 2006), available at <http://www.un.org/News/Press/docs/2006/org1469.doc.htm> [hereinafter Press Release].

171. IPCC Brochure, *supra* note 31.

172. See Summary of the ICPD Programme of Action, *supra* note 32.

173. *Id.*

174. *Id.*

175. IPCC Brochure, *supra* note 31, at 1-2.

176. *Id.*

177. *Id.*

**A. *The United Nations' Organizational Framework as It Relates to Population Policy***

With 30 constituent agencies and 192 member-states, the United Nations is an organization with a pervasive global reach.<sup>178</sup> Its charter sets forth its aims—reproduced below.<sup>179</sup> The United Nations' population policy has evolved through a series of conferences over the past five decades.<sup>180</sup> By way of example, the UNFPA was created by the United Nations and charged with the implementation of the ICPD Programme, the United Nations' present population policy, which was adopted at the 1994 ICPD Programme.<sup>181</sup> To address population issues as they relate to its general mission, the United Nations established the United Nations Population Fund (“UNFPA”)<sup>182</sup> in 1969.<sup>183</sup> Since its inception,<sup>184</sup> the UNFPA was intended to be a catalyst for the “achieve[ment] [of] full collaborative [population] programming in . . . countries around the world.”<sup>185</sup>

In 1994, the ICPD Programme became a milestone of the United Nations' position on global population policy by displacing the established wisdom<sup>186</sup> of

178. Press Release, *supra* note 170.

179. Paragraphs 1 through 4 of Article 1 of the United Nations Charter provides:

- (1) To maintain international peace and security, and to that end: to take effective collective measures for the prevention and removal of threats to the peace, and for the suppression of acts of aggression or other breaches of the peace, and to bring about by peaceful means, and in conformity with the principles of justice and international law, adjustment or settlement of international disputes or situations which might lead to a breach of the peace;
- (2) To develop friendly relations among nations based on respect for the principle of equal rights and self-determination of peoples, and to take other appropriate measures to strengthen universal peace;
- (3) To achieve international co-operation in solving international problems of an economic, social, cultural, or humanitarian character, and in promoting and encouraging respect for human rights and for fundamental freedoms for all without distinction as to race, sex, language, or religion; and
- (4) To be a centre for harmonizing the actions of nations in the attainment of these common ends.

U.N. Charter art. 1 paras. 1-4, *available at* <http://www.un.org/aboutun/charter/index.html>:

180. *See* Babor, *supra* note 79, at 89-91.

181. Summary of the ICPD Programme of Action, *supra* note 32.

182. UNFPA in the United Nations System, About UNFPA, <http://www.unfpa.org/about/unsystem.html> (last visited Mar. 1, 2009) (“In 1987, the name of UNFPA was changed to the United Nations Population Fund, but the acronym, UNFPA, remained the same.”).

183. *Id.*

184. *Id.*

185. *Id.* With the election of President Obama, the United States renewed its financial support for the UNFPA as of January 23, 2009. UNFPA – UNFPA Welcomes Restoration of U.S. Funding, <http://www.unfpa.org/public/News/pid/1562> (last visited Feb. 27, 2009).

186. Summary of the ICPD Programme of Action, *supra* note 32, at intro (“The 115-page document . . . endorses a new strategy which emphasizes the numerous linkages between population and development and focuses on meeting the needs of individual women and men rather than on achieving demographic targets.”).

previous conferences.<sup>187</sup> Specifically, the ICPD Programme jettisoned the “demographic approach” to population policy in favor of the “reproductive health approach.”<sup>188</sup> For this and several other reasons, it has remained—and is likely to remain—the centerpiece of the United Nations’ population policy ratified by 179 delegate nations.<sup>189</sup> The ICPD Programme engendered a long-term approach to tackling population issues and for that reason its signatories agreed to its twenty-year term. Thus, the ICPD Programme will likely play a central role in the shaping of global population policy, at least until it expires in 2014.<sup>190</sup>

### ***B. The ICPD Programme: A Careful Balance***

The ICPD Programme adheres to the fundamental tenet that “persistent widespread poverty and serious social and gender inequities have significant influences on, and are in turn influenced by, demographic factors such as population growth.”<sup>191</sup> Delegates to the ICPD were “explicitly given a broader mandate on development issues than previous population conferences, reflecting the growing awareness that population, poverty, patterns of production and consumption, and the environment are so closely interconnected that none of them can be considered in isolation.”<sup>192</sup> One consequence of its broad mandate is that the ICPD Programme attempts to balance the recognition of individual human rights with a nations’ right to development.<sup>193</sup> To achieve this balance, the ICPD Programme shifted the focus of population from top-down, state-managed demographic targets to the development and promotion of community-based programs that address the rights of the individual and the family.<sup>194</sup> Specifically, the ICPD Programme focuses on the improvement of human rights issues such as education, gender issues and access to health services.<sup>195</sup>

### ***C. The Impact and Enforcement of the ICPD Programme***

The ICPD Programme charges the United Nations Department of Economic and Social Affairs (“UN DESA”) to assess progress toward achievement of ICPD Programme goals.<sup>196</sup> The procedures followed by the UN DESA to evaluate the

---

187. *Id.* at ch. 1, pmb. Specifically, the predecessors to the ICPD are the “World Population Conference in Bucharest in 1974 and the International Conference on Population in Mexico City in 1984.”

188. *See* Babor, *supra* note 79, at 89-96.

189. Summary of the ICPD Programme of Action, *supra* note 32, at ch. 1, pmb.

190. *Id.*

191. *Id.* at ch. 3.

192. *Id.* at ch. 1, pmb.

193. *Id.* at ch. 2 (enumerating fifteen principles that “a careful balance between the recognition of individual human rights and the right to development of nations.”).

194. *Id.* at ch. 3.

195. *Id.* at ch. 1.

196. United Nations, Economics and Social Affairs, World Population Policies 2007 1 (2008) [hereinafter World Population Policies 2007], available at [http://www.un.org/esa/population/publications/wpp2007/Publication\\_introduction.pdf](http://www.un.org/esa/population/publications/wpp2007/Publication_introduction.pdf).

ICPD Programme's success reflect the core principle of voluntary state compliance.<sup>197</sup> Accordingly, to determine comprehensive progress, the UN DESA synthesizes statistics ascertained from 195 different countries.<sup>198</sup> Specifically, the UN DESA looks at three aspects: (1) “[g]overnment views on population size and [trends]; (2) “[g]overnment objectives with respect to each variable,” and; (3) “[g]overnment policies concerning interventions to influence each variable.”<sup>199</sup>

The UN DESA's 2007 report regarding these factors shows that demographic concerns were unevenly distributed according to a nation's level of development.<sup>200</sup> Between 1978 and 2007, the percentage of the fifty least developed countries reporting population growth as “too high” rose from fifty percent to seventy-eight percent.<sup>201</sup> On the other hand, driven by an aging population and a low fertility rate, developed countries expressed their concern over the possibility of a shortage of workers.<sup>202</sup> Even though, “fertility declined from 4.5 children in 1970-1975 to 2.6 children in 2005-2010[;]”<sup>203</sup> the percentage of governments that viewed their populations as “too high” went from thirty-seven percent in 1976 to forty-five percent in 1996 before decreasing to forty-one percent in 2007.<sup>204</sup> Notably, the report suggests that increasing international migration has limited the effectiveness of individual states' population policies.<sup>205</sup> In 2007, the UN DESA concluded that “greater international cooperation and policy coherence” are essential to address the impact of international migration on global population.<sup>206</sup> Accordingly, it is fair to say that the global results of the ICPD Programme have been mixed.

#### ***D. The United Nations' Responsibility for Establishing International Policy on Climate Change***

By promoting climate science and fostering a dialog between climatologists and policymakers, the United Nations serves as an intermediary between policymakers and the data that informs their decisions. As climate change progresses, its effects continue to threaten conditions for agriculture worldwide.<sup>207</sup>

---

197. *Id.*

198. *Id.* at 1.

199. *Id.* at 1 (emphasis in original).

200. *Id.* at 7-32.

201. *Id.* at 7.

202. *Id.* at 7.

203. *Id.* at 12.

204. *Id.*

205. *Id.* at 31-32.

206. *Id.* at 32.

207. SHAOBING PENG ET AL., RICE DECLINE WITH HIGHER NIGHT TEMPERATURE FROM GLOBAL WARMING 1 (National Academy of Sciences of the USA 2004) (“This report provides direct evidence of decreased rice yields from increased night temperature associated with global warming”); Bryan Walsh, *Why Global Warming May be Fueling Australia's Fires*, TIME, Feb. 9, 2009, available at <http://www.time.com/time/health/article/0,8599,1878220,00.html>; see David Adam & Ellen Connolly, *Bushfires and Global Warming: Is There a Link?*, GUARDIAN (London), Feb. 8, 2009, available at <http://www.guardian.co.uk/science/2009/feb/08/global->

Technology, however, can be deployed to remove factors hostile to food production.<sup>208</sup> To the extent that the United Nations contributes to the development and distribution of technology for that purpose, it plays a crucial role in the avoidance of Malthusian Catastrophe.

The United Nations established the United Nations Environment Programme (“UNEP”) in 1972 to oversee environmental issues as they relate to its general mission.<sup>209</sup> Then UNEP founded the Intergovernmental Panel on Climate Change (“IPCC”) in collaboration with the World Meteorological Organization to serve as a scientific advisory group on global climate change.<sup>210</sup> The IPCC strives to be a dispassionate liaison between the scientific community and policymakers.<sup>211</sup> Accordingly, the IPCC sponsors conventions where it formally presents its finding to policymakers.<sup>212</sup> One notable conference was the 1994 United Nations Framework Convention on Climate Change (“UNFCCC”) where 192 nations officially acknowledged climate change and expressed willingness to collaborate on a solution.<sup>213</sup> Thereafter, 184 of those nations ratified the Kyoto Protocol, which took effect in 2005 and imposed legally binding benchmarks for the reduction of greenhouse gas emissions.<sup>214</sup> The Kyoto Protocol expires in 2012, at which point the UNFCCC will reconvene member nations to implement a new policy consistent with the recommendations of the IPCC.<sup>215</sup>

To prepare for that eventuality, the UNFCCC hosted the December 2009 Copenhagen Convention where “[r]epresentatives of 192 nations gathered . . . to seek a consensus on an international strategy for fighting global warming.”<sup>216</sup> To expedite technological advancement, the delegates sought to stimulate five crucial areas of growth:<sup>217</sup>

---

warming-weather-science.

208. See *Geoengineering Projects That Could Offset Global Warming*, *Science Daily*, SCIENCEDAILY.COM, Jan. 28, 2009, <http://www.sciencedaily.com/releases/2009/01/090127190338.htm> (last visited Feb. 6, 2010).

209. About UNEP: The Organization, <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=43&ArticleID=3301&1=en>, (last visited Feb. 28, 2009).

210. IPCC, *supra* note 156; About UNEP, *supra* note 209.

211. IPCC, *supra* note 156.

212. UNFCCC, Meetings, <http://unfccc.int/meetings/items/2654.php> (last visited Nov. 18, 2008).

213. United Nations Framework Convention on Climate Change [http://unfccc.int/essential\\_background/convention/items/2627.php](http://unfccc.int/essential_background/convention/items/2627.php) (last visited Feb. 28, 2009).

214. Kyoto Protocol to the United Nations Framework Convention on Climate Change (2008), available at <http://unfccc.int/resource/docs/convkp/kpeng.pdf>; Kyoto Protocol, [http://unfccc.int/kyoto\\_protocol/items/2830.php](http://unfccc.int/kyoto_protocol/items/2830.php) (last visited Feb. 28, 2009).

215. *Id.*

216. *Copenhagen Climate Talks*, N. Y. TIMES, Dec. 18, 2009, available at [http://topics.nytimes.com/top/reference/timestopics/subjects/u/united\\_nations\\_framework\\_convention\\_on\\_climate\\_change/index.html?scp=1&sq=unfccc%20copenhagen&st=cse](http://topics.nytimes.com/top/reference/timestopics/subjects/u/united_nations_framework_convention_on_climate_change/index.html?scp=1&sq=unfccc%20copenhagen&st=cse).

217. *Id.*

- (1) a new technology mechanism to realize the full potential of technologies;
- (2) increased private sector involvement;
- (3) research & development and commercialization;
- (4) diffusion and transfer of technologies, and;
- (5) intellectual properties-related issues.<sup>218</sup>

Expectations for the Copenhagen Convention were high.<sup>219</sup> Unfortunately, however, Copenhagen will likely be remembered not for its progress on climate change, but for its failure to realize “even the modest expectations for the summit.”<sup>220</sup> Despite the United States’ heightened role in advancing negotiations,<sup>221</sup> the Copenhagen Convention became a stage for jockeying among nations—especially between the United States and China, the world’s two largest emitters of greenhouse gases.<sup>222</sup>

Ultimately, the Copenhagen Convention failed to produce an agreement of any legal significance.<sup>223</sup> Member nations “refused to ratify the three-page Copenhagen Accord that emerged from the meeting, agreeing only to ‘take note’ of it.”<sup>224</sup> Rather than heralding the arrival of a new era in climate policy, Copenhagen ushered in a new atmosphere of frustration and gridlock on the issue.<sup>225</sup> Shortly after the Copenhagen Conventions, the Chief of the United Nations’ IPCC, Yvo de Boer, resigned under a cloud of bitter disappointment.<sup>226</sup> Yet in the wake of de Boer’s resignation commentators maintain hope that “[the] fresh face [of de Boer’s successor] [will] respark the whole process.”<sup>227</sup>

## V. A COMPARATIVE ANALYSIS OF CHINA’S ONE-CHILD POLICY AND THE ICPD PROGRAMME

### A. *Global Solutions to Global Problems*

The insight afforded by China’s one-child policy and the United Nations’ ICPD Programme to global policymakers in the throes of Malthusian Catastrophe

218. *Id.*

219. Elisabeth Rosenthal, *Obama’s Backing Raises Hopes for Climate Change*, N.Y. TIMES, Mar. 1, 2009.

220. *Copenhagen Climate Talks*, N. Y. TIMES, Dec. 18, 2009, available at [http://topics.nytimes.com/top/reference/timestopics/subjects/u/united\\_nations\\_framework\\_convention\\_on\\_climate\\_change/index.html?scp=1&sq=unfccc%20copenhagen&st=cse](http://topics.nytimes.com/top/reference/timestopics/subjects/u/united_nations_framework_convention_on_climate_change/index.html?scp=1&sq=unfccc%20copenhagen&st=cse).

221. Rosenthal, *supra* note 219.

222. Neil MacFarquhar and John M. Broder, *U.N. Climate Chief Quits, Deepening Sense of Disarray*, N.Y. TIMES, Feb. 19, 2010, available at <http://query.nytimes.com/gst/fullpage.html?res=9B03E2D7113EF93AA25751C0A9669D8B63>.

223. United Nations, *The Conference of the Parties, Takes note of the Copenhagen Accord of 18 December 2009*, [http://unfccc.int/files/meetings/cop\\_15/application/pdf/cop15\\_cph\\_auv.pdf](http://unfccc.int/files/meetings/cop_15/application/pdf/cop15_cph_auv.pdf) (last visited Apr. 17, 2010).

224. MacFarquhar & Broder, *supra* note 222.

225. *Id.*

226. *Id.*

227. *Id.*



is that it is dependent on several factors. Each policy views overpopulation through a kaleidoscope of value judgments and cultural norms,<sup>228</sup> although, at their core, each merely reflects the perceptions of policymakers about supply and demand. Ultimately, supply and demand has shaped both the one-child policy and the ICPD Programme more than any other. Nevertheless, other factors have irrefutably played an important role. Policymakers analyzed other factors such as legality, enforceability, impact, assessment, and scope of application.

### **B. Philosophical Underpinnings**

Even though both the one-child policy and the ICPD Programme aim to manage population growth, they are sharply divided in their approaches. The one-child policy is focused on controlling the national birthrate,<sup>229</sup> whereas the ICPD Programme seeks to safeguard human rights and to raise the individual from poverty based on the assumption that unmanageable population growth is driven by socioeconomic factors.<sup>230</sup>

Since the one-child policy takes a “demographic approach,”<sup>231</sup> it strikes a balance in favor of an interest in promoting the public welfare.<sup>232</sup> Necessarily then, in taking this approach, one-child marginalizes an individual’s reproductive liberty interest.<sup>233</sup> The success of the one-child population policy is assessed simply by “subtracting the total number of deaths . . . from the total number of live births.”<sup>234</sup> Therefore, other considerations such as quality of life, human rights, and underlying socioeconomic factors yield under the weight accorded to numerical outcome.<sup>235</sup>

Conversely, by engendering a “reproductive rights approach,” the ICPD Programme strives to bring population growth under control by expanding the individual’s liberty interest. While this may seem counterintuitive, “[t]he foremost strategy endorsed by the ICPD is to ensure that widespread knowledge and means to control fertility are made available everywhere in response to unmet need.”<sup>236</sup> At the ICPD, delegates formally recognized the connection between poverty and unmanageable population growth: “[t]hrough low fertility has in the past been associated with insecurity and hardship, excess child-bearing seems actually to thrive most in a context of indifference to human potential.”<sup>237</sup> The careful balance

---

228. See XIAN FA [Constitution] art. 25, 49 (1982) (P.R.C.); Summary of the ICPD Programme of Action, *supra* note 32.

229. See Hesketh, *supra* notes 161-66 and accompanying text.

230. Summary of the ICPD Programme of Action, *supra* note 32, at ch. 2; see *supra* notes 176-80 and accompanying text.

231. See Babor, *supra* note 79, at 85.

232. See XIAN FA, arts. 25, 49; *supra* notes 176-80 and accompanying text.

233. See Hesketh, *supra* note 100, at 1174.

234. See Babor, *supra* note 79, at 88.

235. See Hesketh, *supra* note 100, at 1171.

236. See Babor, *supra* note 79, at 88.

237. *Id.* at 93.

embodied by the ICPD Programme reflects a comprehensive approach to resolving overlapping issues of “population, poverty, patterns of production and consumption and the environment.”<sup>238</sup> Therefore, the primary thrust of the ICPD Programme is to deal with population issues indirectly by dealing with the issues underlying them.<sup>239</sup>

### ***C. Population Policy: Shaped by Prevailing Perceptions of Resource Scarcity***

Chinese and ICPD policymakers felt compelled to confront the dreary issue of population management only because of a prevailing perception that resources were under urgent threat; however, while the ICPD Programme contemplates a complex relationship between natural resources and population,<sup>240</sup> China’s one-child policy was implemented in response to outright panic about economic and environmental disaster.<sup>241</sup>

Any contemporary discussion of population policy must proceed from the basic assumption that the individual ought to be able to freely choose to reproduce, except perhaps in the extraordinary circumstance where the interest in protecting the public welfare justifies limiting that freedom. Reducing that assumption to its logical constituents reveals that it is comprised of a general rule and an exception to that general rule: (1) *generally*, the individual shall have absolute freedom to reproduce; (2) *except* when an interest in protecting the public welfare justifies limiting that freedom. The octuplets’ saga<sup>242</sup> suggests that the discussion about broader reproductive rights is a discussion about defining the scope of the exception. suggest that the discussion about broader reproductive rights is a discussion about defining the scope of the exception. In other words, the issue is: *when* does the community’s public welfare interest justify limiting the individual’s reproductive liberty interest? Collapsing the exception restrains the community from interfering with the individual’s freedom and shifts the balance toward a larger population. Expanding the exception permits the community to move to protect its interests from being harmed by the individual’s reproductive freedom.

The scope of the exception relates to the considerations of resource availability that underlie Malthusian theory. Shrinking the exception is likely to put more pressure on the availability of resources, since the birthrate is likely to increase. Conversely, when the exception is expanded, the community acts to prevent the individual from reproducing, therefore presumptively preserving resources. Thus, it appears, and examples bear out, that the community will be more likely to intervene on the individual’s right to reproduce where resources are scarce, or there is a perception that resources are scarce.<sup>243</sup>

---

238. See Summary of the ICPD Programme of Action, *supra* note 32, ch. 1, pmb1.

239. See *id.*

240. See *id.* at ch. 3.

241. See *supra* notes 121-27 and accompanying text.

242. See *supra* notes 2-8 and accompanying text.

243. See *supra* notes 95 and accompanying text.

China's one-child policy is a salient example of this relationship. Immediately before the implementation of the one-child policy, there was acute national fear that the population was going to skyrocket uncontrollably.<sup>244</sup> That fear was an accelerant poured on a fire already fueled by the perception that China contained only a small fraction of arable land (perception of low resources).<sup>245</sup> When these perceptions coincided, implementing the one child policy appeared prudent. Accordingly, the Chinese used these perceptions to justify an oppressive population policy.<sup>246</sup> As a result, the one-child policy warps the logical structure of the assumptions underlying reproductive rights to a point of collapse. Ultimately, the one-child policy allows the exception to swallow the rule.

The ICPD Programme evolved out of an intellectual heritage with broad and deliberate considerations about resource scarcity.<sup>247</sup> Notably, an urgent, impending sense of doom was lacking in the formulation of the ICPD Programme. Instead, "the limitations of the Earth to support both those whose resources are scarce and those who over-consume [were gradually] becom[ing] clearer[.]"<sup>248</sup>

#### **D. Other Policy Considerations**

In part, the one-child policy was implemented in *response* to the perception of an existing crisis, while the ICPD Programme was developed as a prospective attempt to *avoid* one. The Chinese one-child policymakers, such as Song, and the ICPD delegates differed in the way they assessed considerations of food scarcity underlying Malthusian theory. In Song's view, resources were already so threatened by the time that he attended the Chengdu conference that he viewed the theory as a direct reaction.<sup>249</sup> ICPD delegates, on the other hand, took the long view that the ICPD Programme was a way to recast population issues for the purpose addressing them in the future.<sup>250</sup>

Of further consideration to the population policymaker are technology and marketing campaigns.<sup>251</sup> They are secondary considerations for the Malthusian theorist insofar as they do not *directly* affect either the rate at which populations or resources grow, yet they clearly have substantial impact. To begin, in the context of a discussion about population policy, technology serves two potential separate and distinct functions.<sup>252</sup> First, it may potentially expand the capacity of land to

244. See Hesketh, *supra* note 100, at 1171.

245. See *id.*

246. See Spahn, *supra* note 97, at 1299-1300.

247. Summary of the ICPD Programme of Action, *supra* note 32, at ch. 1, intro.

248. See Babor, *supra* note 79, at 84.

249. See Greenhalgh, *supra* note 90, at 263-64.

250. Summary of the ICPD Programme of Action, *supra* note 32, at intro (explaining that "[d]elegations from 179 States took part in negotiations to finalize a Programme of Action on population and development for the next 20 years.").

251. The Chinese and Indians both employed marketing barrages side-by-side with their population policies. See *supra* notes 26, 147 and accompanying text.

252. See *supra* note 23 and accompanying text.

produce food, thereby increasing the population, but also staving off fears of Malthusian Catastrophe.<sup>253</sup> Second, technology might be able to prevent or defer climate change or other global events, which would otherwise operate to create conditions unfavorable to food availability. Next, marketing campaigns work in an even less direct way.<sup>254</sup> They influence the individual's decision on the subconscious level by coloring her perception of socially acceptable behavior. Before the one-child policy was implemented there is notable data suggesting that advertising campaigns were having the desired slowing effect on birthrate.<sup>255</sup>

China's one-child policy and the United Nations' ICPD Programme further diverge on a number of key issues. One critical disparity is their respective legal basis. China's one-child policy has been incorporated into the Chinese constitution.<sup>256</sup> As such, it forms part of the legal foundation of Chinese law.<sup>257</sup> On the other hand, the ICPD Programme is a provision that only applies to a sovereign nation once it has voluntarily ratified it.<sup>258</sup> Accordingly, countries are free to forego adopting the ICPD Programme.<sup>259</sup>

## VI. CONCLUSION

### A. *An Unstoppable Force, an Immovable Object*

Simply put, when population rises beyond the point that available resources can sustain, something must give.<sup>260</sup> Perhaps technology can continue to stretch resources. If the hope that technology can continue to expand the planet's food bearing capability is realized, then the population can continue to grow and Malthusian Catastrophe will be avoided. Perhaps technology can stave off a global climate crisis, and in so doing remove limitations to food scarcity; perhaps not. China's one-child policy is reviled for its compromise of the individual's reproductive liberty interest,<sup>261</sup> however in a world on the brink, gripped by panic, and without hope for technological salvation, policymakers would be compelled to make compromises that are presently unthinkable. Today's policymakers have the great luxury of being able to balance the unstoppable force of population growth against the immovable object of resource scarcity:

---

253. See Wade, *supra* note 40 (arguing that the Industrial Revolution represents "the first escape from the Malthusian trap").

254. NOVA, *World Balance*, *supra* note 28; Hesketh, *supra* note 100.

255. See Greenhalgh, *supra* note 90, at 260 ("From December 1973 birth work had been guided by the *wanxishao* policy ([i.e.,] calling for later marriage, longer child spacing and fewer offspring). Under the slogan 'one is not few, two are just right, three are too many,' 'few' effectively meant two. This policy had produced striking demographic results, halving the total fertility rate from just under six to just under three children per woman during the 1970s.").

256. XIAN FA [Constitution] art. 25, 49 (1982) (P.R.C.).

257. Though there is evidence that the policy is being enforced with ever greater flexibility.

258. Summary of the ICPD Programme of Action, *supra* note 32.

259. *See id.*

260. See Lahart, *supra* note 19.

261. See Babor, *supra* note 79, at 97-98.

Indeed, the true lesson of Thomas Malthus . . . isn't that the world is doomed, but that preservation of human life requires analysis and then tough action. Given the history of England, with its plagues and famines, Malthus had good cause to wonder if society was "condemned to a perpetual oscillation between happiness and misery." That he was able to analyze that "perpetual oscillation" set him and his time apart from England's past. And that capacity to understand and respond meant that the world was less Malthusian thereafter.<sup>262</sup>

Therefore, now is the time for policymakers to calibrate the balance between supply and demand.

### ***B. Hope for the Future Lies in Today's Policies***

Hopefully, China's one-child policy is not the global policymaker's unexpected guide to Malthusian Catastrophe. More than anything else, China's one-child policy should be a cautionary tale for future and contemporary policymakers to heed. It illustrates the harm that can be wrought on a population when fears of a looming Malthusian Catastrophe prevail: human rights are sacrificed as the balance tips in favor of the collective interest. Thus, the lesson to be taken from the one-child policy is that policymakers must do everything possible to neutralize such a fear before it can take hold.

For contemporary policymakers, that means acknowledging both the complexity and subtlety of the relation between escalating population and planetary crisis. The ICPD Programme has certainly taken an important step in doing that by affirming its "awareness that population, poverty, patterns of production and consumption and the environment are so closely interconnected that none of them can be considered in isolation,"<sup>263</sup> though a "vision which allows for concerted local and global cooperation is critical if resource demands, let alone basic needs, are to be met."<sup>264</sup> Moreover, the UN DESA's conclusions on the progress of the ICPD Programme's goals affirm the need for a comprehensive global approach.<sup>265</sup> Thus, population policy must be more comprehensive, collaborative and conscious of resource scarcity.

Blending climate change policy with population policy is one way to improve the quality and focus of both. By doing this, the unhappy compromises of individual rights in China's one-child policy may be avoided by future population policy even in desperate situations. With climate change poised to have an increasingly adverse impact on agricultural yield worldwide,<sup>266</sup> it is positioned to be the singular crucial factor affecting the availability of resources.<sup>267</sup>

---

262. See Lahart, *supra* note 19.

263. See Summary of the ICPD Programme of Action, *supra* note 32, at ch. 1.

264. See Babor, *supra* note 79, at 84.

265. See World Population Policies 2007, at 32.

266. See *supra* notes 15-19 and accompanying text.

267. See GORE, *supra* note 15, at 307.

The UNFCCC's Copenhagen Convention represented a monumental opportunity for global policymakers to take bold action on climate change.<sup>268</sup> Sadly, the only thing matched by Copenhagen's promise was the extent to which it failed. Ultimately, to stave off climate change, "every nation [must] accept emissions limits."<sup>269</sup> In fact, according to the IPCC's lead scientist, "[i]f one part of the world acts and the other does not, that doesn't really generate a climate benefit."<sup>270</sup> But Copenhagen was not a *complete* failure. Before Copenhagen, China had never ratified nor complied with the Kyoto Protocol.<sup>271</sup> The singular bright spot in the Copenhagen debacle is that China has shown itself willing to engage on the issue, however reluctantly. With the benefit of hindsight, Copenhagen will likely be interpreted as a disappointment for its failure to produce a binding international agreement on climate change. If, however, nations can capitalize on the political momentum generated by the unprecedented consensus to act and the eventual appointment of a new United Nations Climate Chief, perhaps they can seize upon our fleeting opportunities to stop climate change; doing so may be the only way to diminish a resurgence of the fear associated with a Malthusian Catastrophe once used to justify the China's one-child policy.

---

268. Rosenthal, *supra* note 219.

269. *Id.* (emphasis added).

270. *Id.*

271. *Id.*