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2013]

TOO MUCH OF A GOOD THING: HOW OVERPOPULATION,
OVERCONSUMPTION, AND FAILING DISTRIBUTIVE
JUSTICE PROGRAMS ARE IMPERILING MANKIND

Every year on the fourth Thursday of November, millions of Americans engage in what is perhaps the most quintessential American tradition: a Thanksgiving feast.¹ The widespread availability of resources in developed nations makes it easy to forget that every day, billions of impoverished people strain to procure resources as basic as food and water.² For instance, the average Thanksgiving meal in America consists of roughly three thousand calories per diner and costs \$49.20 to prepare.³ In underdeveloped countries, contrastingly, nearly one billion people struggle daily to survive on inadequate nourishment.⁴

While hunger is undoubtedly a major world crisis, food is not the only world resource currently strained beyond sustainable limits.⁵ Human demand for fresh water, timber, fiber, and fuel has strained the earth's resources to levels some scientists argue imperil not just mankind, but every world species.⁶ Moreover, with human demand expected to grow substantially in the coming years, the in-

1. Jonathan Bloom, *The food not eaten – Food waste: out of sight, out of mind*, CULINATE (Nov. 19, 2007), http://www.culinate.com/articles/features/wasted_food (discussing how Thanksgiving symbolizes American overconsumption and wastefulness).

2. Food and Agriculture Org., *How to Feed the World in 2050*, 5-6 (Oct. 12, 2009), available at http://www.fao.org/fileadmin/templates/wsfs/docs/expert_paper/How_to_Feed_the_World_in_2050.pdf [hereinafter *Feed the World*] (demonstrating majority of world population lives in underdeveloped and resource-strained countries).

3. Deborah Kotz, *Weekly Challenge: create a Thanksgiving eating game plan*, THE BOSTON GLOBE (Nov. 21, 2011), <http://www.bostonglobe.com/lifestyle/health-wellness/2011/11/21/weekly-challenge-create-thanksgiving-eating-game-plan/Mj7liSbAGF00FIBUaTTNPK/story.html> (discussing Americans' massive caloric consumption during Thanksgiving meals); *Average Thanksgiving Meal Price Shoots Up 13 Percent Due To Rising Food Costs*, HUFFPOST FOOD (Nov. 10, 2011, 5:40 PM), http://www.huffingtonpost.com/2011/11/10/thanksgiving-meal-price-shoots-up_n_1086257.html (analyzing annual cost to prepare traditional Thanksgiving meals).

4. *Hunger Facts*, FREEDOM FROM HUNGER, <http://www.freedomfromhunger.org/info/> (last visited Jan. 5, 2013) (illustrating widespread malnourishment plaguing impoverished populations worldwide).

5. Tim Radford, *Two-thirds of world's resources 'used up'*, THE GUARDIAN (Mar. 29, 2005), <http://www.guardian.co.uk/science/2005/mar/30/environment.research> (discussing scientific report arguing humans have consumed two-thirds of Earth's natural resources).

6. *Id.* (noting strain on several resources necessary for human survival).

creased strain on natural resources and the problems resulting therefrom are expected to create dire world crises.⁷

While many factors contribute to the current natural resources strain, the two greatest factors are also the most rectifiable: overpopulation and overconsumption.⁸ The current human population, just north of seven billion, is the largest the world has ever seen.⁹ Coupled with staggering resource overconsumption by wealthy nations, the human species is collectively strip-mining the earth of its natural resource reserves.¹⁰

Because of the strain human demand places upon natural resources, some areas of the world lack the resources necessary to meet human demand.¹¹ In order to provide destitute populations with the resources necessary to ensure basic survival, governments worldwide have enacted distributive justice programs seeking to reallocate resources to resource-poor populations.¹² Governments use these distributive justice programs to reallocate resources to both domestic and foreign populations.¹³

Despite the hundreds of billions of dollars in aid used to provide survival staples such as food, water, and shelter, billions of people worldwide remain unable to procure the resources necessary to survive.¹⁴ The vast number of people that continue to struggle de-

7. See *Feed the World*, *supra* note 2, at 2, 6 (analyzing drastic expected increase in human demand for natural resources).

8. Jennifer M. Wenner, *Population growth and resource depletion*, SCI. EDUC. RESOURCE CENTER CARLTON C., <http://serc.carleton.edu/quantskills/methods/quantlit/popgrowth.html> (last modified Nov. 9, 2012) (discussing strain overpopulation and overconsumption place on natural resources, and measures necessary to achieve sustainability).

9. U.S. and World Population Clocks, U.S. CENSUS BUREAU, <http://www.census.gov/main/www/popclock.html> (last visited Jan. 5, 2013) [hereinafter *Population Clocks*] (estimating U.S. and world population on per minute basis).

10. Wenner, *supra* note 8 (projecting it would require five Earths to provide sufficient resources for everyone worldwide to live as Americans do).

11. *Hunger Facts*, *supra* note 4 (detailing how over one billion people worldwide do not have adequate food or medical resources); *Energy poverty: The hidden energy crisis*, PRACTICAL ACTION (Feb. 2009), http://practicalaction.org/docs/advocacy/energy_poverty_hidden_crisis.pdf [hereinafter *Energy Poverty*] (discussing impoverished populations' struggle to access energy).

12. *Net Official Development Assistance In 2009*, ORG. FOR ECON. CO-OPERATION & DEV. (Apr. 14, 2010), <http://www.oecd.org/dataoecd/17/9/44981892.pdf> [hereinafter *Development Assistance*] (examining government aid by country).

13. See, e.g., *Programs*, CATALOG OF FED. DOMESTIC ASSISTANCE, <https://www.cfda.gov/?s=program&mode=list&tab=list&tabmode=list> (last visited Jan. 5, 2013) (listing over 2000 domestic aid programs operated by U.S. government); *Development Assistance*, *supra* note 12 (detailing foreign aid donations on country-by-country basis).

14. *Hunger Facts*, *supra* note 4 (describing how billions of people worldwide struggle to obtain nutrition necessary for survival); *Hunger & Poverty Statistics*, FEED-

spite such massive aid efforts suggests current distributive justice programs are failing.¹⁵ With population and resource demand expected to increase dramatically, the failings of current distributive justice programs lay the foundation for potentially catastrophic resource crises in the future.¹⁶

Nevertheless, despite their shortcomings, distributive justice programs are integral to preserving billions of lives and world order.¹⁷ The indispensable nature of distributive justice programs requires they be continued, though corrected.¹⁸ Distributive justice programs alone, however, cannot adequately ensure the survival of resource-poor populations while preserving sufficient resource reserves to maintain long-term sustainability – human lifestyles must change.¹⁹ Restructuring distributive justice programs to more effectively allocate world resources, while also shifting mankind toward more sustainable living patterns, can significantly improve the quality of life in destitute populations and maintain sufficient resource reserves to achieve long-term sustainability.²⁰

I. OVERPOPULATION

During the latter half of the twentieth century, the global human population grew at an astonishing and unprecedented

ING AM., <http://feedingamerica.org/hunger-in-america/hunger-facts/hunger-and-poverty-statistics.aspx> (last visited Jan. 5, 2013) (noting over 48 million Americans struggled with hunger in 2010).

15. Marian L. Tupy, *Is Aid Working?*, CATO INST. (May 28, 2009), http://www.cato.org/pub_display.php?pub_id=10253 (discussing how international aid has failed to improve life for millions of Africans); Melinda Burns, *Welfare Reform Failing Poor Single Mothers*, PAC. STANDARD (Oct. 28, 2010), <http://www.psmag.com/politics/welfare-reform-failing-poor-single-mothers-24778/> (analyzing how American welfare is failing to provide resources to Americans most in need of assistance).

16. See, e.g., *Feed the World*, *supra* note 2, at 8 (projecting massive resource production required for future human populations to subsist).

17. Alex G. Coutinho, *Dead Aid: The Wrong Prescription for Africa*, HUFFPOST WORLD (Apr. 1, 2009, 12:30 PM), http://www.huffingtonpost.com/alex-g-coutinho/idead-aidi-the-wrong-pres_b_181744.html (highlighting government aid's many successes in increasing quality of life and societal stability abroad).

18. See Vincent Fernando, *One In Six Americans Now Receives Government Aid*, BUSINESS INSIDER (Aug. 30, 2010), http://articles.businessinsider.com/2010-08-30/markets/30000154_1_national-employment-law-project-benefits-americans (demonstrating how distributive justice programs are necessary to ensure survival of as many as one in six Americans).

19. Wenner, *supra* note 8 (analyzing massive strain western lifestyles place upon natural resource reserves).

20. For an analysis of how restructuring distributive justice programs and shifting mankind toward more sustainable lifestyles can promote resource security and long term sustainability, see *infra* notes 179-229 and accompanying text.

rate.²¹ From 1950 to 1990 – far less than the span of one human lifetime – the world saw its population double from 2.5 to 5 billion people.²² Although the rate of human population growth has slowed from its historical peak during the 1960s, the current population growth rate, 1.3% per year, remains alarming.²³ Census data project the current global population, just over seven billion, will rise to as high as twelve billion by the year 2100.²⁴ While there are uncontrollable extrinsic factors that may cause disagreement among population growth theorists, one fact is certain: the human population is rising to a truly overwhelming level.²⁵

A. Growth Rates and Real Numbers

Although a global population growth rate of 1.3% per year may not seem high, the practical impact of such a growth rate is incredible.²⁶ According to the Population Reference Bureau, over

21. *Population Growth over Human History*, GLOBAL CHANGE PROGRAM U. OF MICHIGAN (Jan. 4, 2006), http://www.globalchange.umich.edu/globalchange2/current/lectures/human_pop/human_pop.html [hereinafter *Population Growth History*] (noting human population growth reached its historical peak, 2.1% per year, between 1965 and 1970).

22. *Id.* (discussing global population boom that occurred from 1950 to 1990). In contrast to the 2.5 billion person increase in population that occurred from 1950 to 1990, the preceding fifty year span from 1900 to 1950 saw a worldwide population increase of less than one billion people. *Transitions in World Population*, 59 POPULATION BULLETIN 1, 5 (Mar. 2004), available at <http://www.prb.org/Source/ACFFF4.pdf> (exhibiting world population trends).

23. *Population Growth History*, *supra* note 21 (noting current population growth must be stymied in order to maintain global stabilization). While potential population crisis solutions abound, the researchers here take the stance that global fertility levels must be reduced. *Id.* See also Public Data, GOOGLE, http://www.google.com/publicdata/explore?ds=d5bncppjof8f9_&met_y=sp_pop_grow&tdim=true&dl=en&hl=en&q=current+world+population+growth+rate (last visited Jan. 5, 2013) (providing another estimate of world population growth rate, estimated to be 1.15% in 2011).

24. Population Clocks, *supra* note 9 (projecting world population to be as large as 12 billion by year 2100). According to the census world population clock, which estimates the world population on a per minute basis, the world population increased by over 70 million people over the period of time this Comment was written. *Compare 2011 World Population Data Sheet*, POPULATION REFERENCE BUREAU, 2 (July 2011), available at http://www.prb.org/pdf11/2011population-data-sheet_eng.pdf [hereinafter *2011 Population Data*] (noting 2011 world population), with *2012 World Population Data Sheet*, POPULATION REFERENCE BUREAU, 2 (July 2012), available at http://www.prb.org/pdf12/2012-population-data-sheet_eng.pdf (noting 2012 world population).

25. *Population Growth History*, *supra* note 21 (describing human population growth levels as “truly phenomenal”).

26. *Id.* (noting current growth rate and population projections indicate population levels may approach carrying capacity estimates).

140 million infants were born worldwide in 2010.²⁷ When that newborn figure is broken down temporally, the numbers are staggering: globally, 384,000 children were born each day, 267 children were born every minute, and 4.45 infants were born every second of every day.²⁸ On a macro level, the world population currently increases by one billion people roughly every twelve years, but the problem is growing.²⁹

As the world's population grows, the baseline upon which the population growth rate acts also increases.³⁰ Because the baseline population continues to rise, the population growth rate represents a perpetually greater number of real world people added to the population.³¹ Simply put, more people mean more babies - the problem is exponential.³² The effect of such exponential population growth is that although the population growth rate may decline, the net number of real people walking the earth continues to increase dramatically.³³ The exponential nature of human population growth makes it unlikely, if not impossible, that the real world human population will ever naturally decline.³⁴

In addition to raw population growth, death rates worldwide have declined significantly in recent years.³⁵ Following World War

27. *2010 World Population Data Sheet*, POPULATION REFERENCE BUREAU, 2 (July 2010), http://www.prb.org/pdf10/10wpds_eng.pdf (illustrating world population statistics).

28. *Id.* (breaking down population statistics temporally).

29. *Id.* at 3 (discussing population trends and estimated population increase relative to time). Compare that while from 1960-2011 the world population increased by roughly 4 billion people, it took from the beginning of time until 1800 for the world population to reach 1 billion people. *Id.*

30. *Id.* at 2. (illustrating net increase in world population after worldwide mortality numbers are subtracted from worldwide birth numbers). The net increase in world population during 2010 was over 83 million people. *Id.*

31. *Population Growth History*, *supra* note 21 (explaining population dynamics).

32. *Id.* (noting larger population base results in larger net increases to populations via increased births). See also *World Population Growth, 1950-2050*, POPULATION REFERENCE BUREAU, <http://www.prb.org/Educators/TeachersGuides/HumanPopulation/PopulationGrowth.aspx> (last visited Jan. 5, 2013) (illustrating population growth's exponential nature).

33. *Population Growth History*, *supra* note 21 (illustrating that although recent population growth rates have fallen nearly 1% from historical peaks, real world population numbers are higher than ever before).

34. *2011 Population Data*, *supra* note 24, at 6-9 (projecting most countries worldwide will see population increases by 2050). In the "2050 Population as a Multiple of 2011" column, every country with a number greater than 1 is forecast to see a population increase. *Id.* Many undeveloped countries have a much higher "2050 Population as a Multiple of 2011" factor, and thus are projected to experience much greater population increases than developed countries. *Id.*

35. *Id.* at 3 (noting mortality rates have fallen with "unusual rapidity" since World War II ended).

II, developing countries experienced a drastic increase in their ability to access public health benefits and modern medicine.³⁶ As a result, developing countries have seen a rapid decline in death rates, and consequently a proportionately rapid increase in population growth.³⁷ With progressive improvements in modern medicine, as well as increasing dedication by developed countries and philanthropists to improve worldwide healthcare, scholars project death rates worldwide will continue falling, thereby further adding to the increase in global population.³⁸

B. Where is the Growth?

While the world at large is experiencing population increase, there is tremendous disparity among geographic population patterns.³⁹ At the close of 2011, the U.S. Census Bureau estimated the world population to be over 6.9 billion.⁴⁰ Of that 6.9 billion, only 1.24 billion people, or roughly 18% of the world population, lived in developed countries.⁴¹ At the other end of the spectrum, 5.74 billion people, or four out of every five people walking the earth, lived in less-developed countries.⁴²

Not only does most of the world's current population live in less-developed countries, projections predict future population growth will occur almost exclusively in less-developed countries.⁴³ According to population analyses performed by the U.N.'s Food

36. *Id.* (discussing causes of falling worldwide mortality rates).

37. *Compare Population Growth History*, *supra* note 21 (discussing worldwide drops in mortality rates, and causes thereof, over last forty years), *with 2011 Population Data*, *supra* note 24 (illustrating projected population increases by country).

38. *Population Growth History*, *supra* note 21 (explaining how combining current mortality rate trends, growth rate trends, and baseline population trends predicts future population growth). There is a suggestion that should birth rates continue to decline, eventually birth rates and mortality rates may reach equilibrium, thereby resulting in a stabilized and constant world population. *Id.* It is, however, expected to take "many decades" for birth rates and mortality rates to equilibrate. *Id.*

39. *2011 Population Data*, *supra* note 34 (exhibiting disparity in population trends between developed and less developed countries).

40. *Id.* (noting worldwide population in 2011 was 6,986,951,000 people). *See also* Population Clocks, *supra* note 9 (estimating current world population on per minute basis).

41. *2011 Population Data*, *supra* note 34, at 6-13 (illustrating developed countries' population dynamics in relation to global population levels).

42. *Id.* (comparing population dynamics in less developed countries to global population levels). The 5.74 billion people living in less-developed countries during 2011, out of 6.9 billion globally, represented over 80% of the global population. *Id.*

43. *Feed the World*, *supra* note 2, at 5 (illustrating disparity between developed and less developed countries' population projections).

and Agriculture Organization (FAO), by the year 2050, the world population is expected to reach over nine billion people.⁴⁴ Of that expected nine billion, the FAO projects nearly eight billion people will reside in less-developed countries.⁴⁵ Reading FAO analyses in conjunction with the World Population Bureau's population analyses illustrates the problem: the current population in developed nations, roughly 1.24 billion, is projected to remain constant or even decrease, while the population in less-developed nations is expected to increase from roughly 5.74 billion to nearly eight billion.⁴⁶ In other words, the world's population is expected to increase by several billion people, with the entire increase expected to occur in less-developed countries.⁴⁷

II. OVERCONSUMPTION

Besides sheer overpopulation, the other primary stress mankind exerts upon resource reserves is overconsumption by the world's most developed nations.⁴⁸ Among developed nations, America reigns supreme as the consummate over-consumer.⁴⁹ As noted, there is perhaps no greater symbol of American overconsumption than the Thanksgiving feast enjoyed by millions each year.⁵⁰ America's Thanksgiving gorging, however, is only the tip of

44. *Id.* (exhibiting worldwide population projections).

45. *Id.* (projecting massive population concentration in less developed countries in 2050). Should FAO population projections be realized, roughly 85% of the world's population will be living in less developed countries by 2050. *See id.*

46. *Id.* (projecting population increase in less developed nations while populations in developed nations remain relatively constant). *See also 2011 Population Data, supra* note 24 (projecting population increases by nation for 2050).

47. *Feed the World, supra* note 2, at 5 (noting nearly all forecasted population increase is projected to occur in less developed countries).

48. Anup Shah, *Consumption and Consumerism*, GLOBAL ISSUES, <http://www.globalissues.org/issue/235/consumption-and-consumerism> (last updated Mar. 6, 2011) (illustrating worldwide private consumption disparity between wealthy, middle, and impoverished populations). In 2005, the world's wealthiest 20% of inhabitants accounted for 76.6% of total worldwide private consumption. *Id.* The middle 60% and poorest 20% accounted for 21.9% and 1.5% respectively. *Id.*

49. Suzanne Goldenberg, *US cult of greed is now a global environmental threat, report warns*, THE GUARDIAN, Jan. 12, 2010, at 17, available at <http://www.guardian.co.uk/environment/2010/jan/12/climate-change-greed-environment-threat> (blaming American overconsumption for resource strain and spreading overconsumption worldwide). The average American is thought to consume more than their weight in products each and every day. *Id.*

50. *Compare* Kotz, *supra* note 3 (noting average Americans consume roughly 3,000 calories during Thanksgiving meal alone - not counting other caloric intake that day), with *Daily Calorie Intake Per Capita*, CHARTSBIN, <http://chartsbin.com/view/1150> (last visited Jan. 5, 2013) (illustrating average daily caloric intake by country).

the iceberg.⁵¹ In addition to its reputation as “the fast food nation,” America could also accurately be described as the “food-wasting nation”: it is estimated that every year, 40% of all food in America, or about twenty-nine million tons, is discarded.⁵² Some scholars suggest that as many as 200 million starving people could subsist solely on food Americans throw away.⁵³

Overconsumption, however, is not limited to food or America.⁵⁴ Carbon emissions are often used as an indicator of a population’s fossil fuel consumption.⁵⁵ Recent research indicates the world’s wealthiest half-billion citizens, or only 7% of the world’s population, are responsible for 50% of the fossil fuels consumed worldwide each year.⁵⁶ Among the wealthiest 20% of world citizens, the energy consumption level rises to nearly 80% of the world’s annual fossil fuel consumption.⁵⁷ Put into real numbers, in 2010, the United States alone consumed 19,150,000 barrels of oil (804,300,000 gallons) every day.⁵⁸ India, a country with roughly four times the population of the United States, consumed only 3,182,000 barrels per day during the same period.⁵⁹

51. Fred Pearce, *Consumption Dwarfs Population as Main Environmental Threat*, YALE ENVIRONMENT 360 (Apr. 13, 2009), http://e360.yale.edu/feature/consumption_dwarfs_population_as_main_environmental_threat/2140/ (discussing breadth of American overconsumption). Americans lead the world in consumption of “most of the world’s major commodities: corn, coffee, copper, lead, zinc, aluminum, rubber, oil seeds, oil, and natural gas.” *Id.*

52. Bloom, *supra* note 1 (discussing American’s extensive food wasting). The amount of food Americans waste annually, 29 million tons, is enough to fill the iconic Rose Bowl Stadium every three days. *Id.*

53. Jeremy Hance, *Americans throw away enough food every year to feed 200 million adults*, MONGABAY (Nov. 30, 2009), http://news.mongabay.com/2009/1129-hance_foodwastetwo.html (discussing UN estimates regarding how much food Americans waste). Interestingly, in addition to the food wasted, approximately 300 million barrels of oil are wasted each year powering farm equipment that produces crops ultimately discarded as wasted food. *Id.*

54. Pearce, *supra* note 51 (discussing overconsumption of various resource types by several wealthy nations).

55. *Id.* (explaining carbon emissions as ecological indicator of fossil fuel consumption).

56. *Id.* (noting massive fossil fuel consumption by wealthy nations).

57. Shah, *supra* note 48 (illustrating 20% of world population consumes nearly 80% of world resources annually).

58. *The World Factbook: Country Comparison: Oil-Consumption*, CENT. INTELLIGENCE AGENCY, <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2174rank.html> (last visited Jan. 5, 2013) [hereinafter *Oil Consumption Comparison*] (exhibiting 2010 oil consumption by country). One barrel of crude oil is equivalent to 42 gallons of crude oil. Liquid Fuel Measurements and Conversions, IOWA STATE U., 2 (Oct. 2008), <https://www.extension.iastate.edu/agdm/wholefarm/pdf/c6-87.pdf> (listing liquid fuel measurement conversions).

59. *Oil Consumption Comparison*, *supra* note 58 (comparing oil consumption by country). See also *The World Factbook: Country Comparison: Population*, CENT. INTELLI-

Perhaps the most demonstrative measure of overconsumption by wealthy nations is the “ecological footprint.”⁶⁰ The ecological footprint measures the land area required to produce the resources a nation consumes per capita.⁶¹ Measured in hectares (an area of land more than twice the size of an acre), researchers have determined 9.5 hectares are required to produce the resources necessary to sustain the lifestyle of one average American.⁶² Though a few nations lag not far behind America in leaving large ecological footprints, the average ecological footprint worldwide is only 2.7 hectares.⁶³ Thus, no matter how it is measured, overconsumption by wealthy nations, in addition to population growth, places enormous strain upon natural resources.⁶⁴

III. RESOURCE STRAIN

The rapid population growth and rampant overconsumption discussed above perilously strain the world’s resource reserves.⁶⁵ Even water, which is largely taken for granted as perpetually renewable, is a resource millions go without; roughly 783 million people worldwide do not have access to safe water.⁶⁶ In fact, a study published by the World Wildlife Fund suggests that should current

GENCE AGENCY, <https://www.cia.gov/library/publications/the-world-factbook/rankorder/2119rank.html> (last visited Jan. 5, 2013) (comparing national population statistics).

60. Pearce, *supra* note 51 (discussing worldwide consumption as reflected by each country’s ecological footprint).

61. *Id.* (explaining how ecological footprints are measured).

62. *Id.* (discussing disparity among different countries’ ecological footprints). To put measurements in perspective, one hectare is an area of land measuring 100 meters long by 100 meters wide. See Glossary, GLOBAL FOOTPRINT NETWORK, <http://www.footprintnetwork.org/en/index.php/gfn/page/glossary/> (last visited Jan. 5, 2013).

63. Pearce, *supra* note 51 (comparing ecological footprints by country). While the U.S. has the greatest ecological footprint at 9.5 hectares, other countries exhibiting large ecological footprints include: Australia – 7.8; Canada – 7.1; Britain – 5.3; Japan – 4.9; and Germany – 4.2. *Id.*

64. *Id.* (noting both overpopulation and overconsumption strain resources). Fred Pearce, an environmental journalist who has written for YALE ENVIRONMENTAL 360 magazine, argues overconsumption, not overpopulation, is in fact the greatest strain on resource reserves. *Id.*

65. Michael Moyer & Carina Storrs, *How Much is Left? The Limits of Earth’s Resources*, SCI. AM. (Aug. 24, 2010), <http://www.scientificamerican.com/article.cfm?id=how-much-is-left> (forecasting future strain and depletion per resource).

66. Statistics, WATERAID, http://www.wateraidamerica.org/what_we_do/statistics.aspx?gclid=CKe3j8iVzqwCFYqA5QodPVNPrQ (last visited Jan. 5, 2013) (noting worldwide strain for clean water).

levels of resource strain persist, the resources most critical to mankind's survival might be completely exhausted by 2050.⁶⁷

A. Food

It is not surprising that, in light of exponential population growth and unbridled overconsumption, food scarcity has become a serious world issue.⁶⁸ Even in America, the epitome of overconsumption, it is estimated that 48.8 million people live in households struggling with hunger.⁶⁹ When that number is extrapolated to a global level, an astonishing 925 million people worldwide struggle with food insecurity.⁷⁰ To meet the projected needs of the world's population in 2050, the FAO estimates worldwide food production must increase by 70%, including the production of an additional 100 billion tons of cereals and 200 million tons of meat.⁷¹ In order to meet the world's current and future food demands, mankind must increase productivity and access to food on a global level – yet food production and access are the most strained facets of the hunger problem.⁷²

1. Production

During the late twentieth century, the world experienced a boom in farm output that created large food stockpiles.⁷³ More recently, however, farm growth has slowed dramatically, such that worldwide agriculture is currently unable to produce enough food

67. See *Living Planet Report 2006*, WORLD WILDLIFE FUND, 20 (Oct. 2006), http://awsassets.panda.org/downloads/living_planet_report.pdf (projecting by 2050 humans will consume resources twice as fast as they can be produced). The report specifically notes food, water, fiber, timber, and land are likely to be among the most strained resources if current consumption trends continue. See *id.* at 2. See also Mark Townsend & Jason Burke, *Earth 'will expire by 2050'*, THE GUARDIAN (July 6, 2002), <http://www.guardian.co.uk/uk/2002/jul/07/research.waste> (arguing, based on separate WWF study, humans will need to colonize two Earth-equivalent planets to continue supporting current resource consumption trends).

68. *Feed the World*, *supra* note 2, at 2, 4 (discussing current and projected global food demands).

69. Hunger & Poverty Statistics, *supra* note 14 (discussing hunger in America statistically). The 48.8 million Americans that struggled with hunger in 2009 represent over 15% of the entire U.S. population. *Id.*

70. *Global Hunger*, BREAD FOR THE WORLD, <http://www.bread.org/hunger/global/> (last visited Jan. 5, 2013) (discussing global hunger issues).

71. *Feed the World*, *supra* note 2, at 2 (analyzing expected food demands in 2050).

72. *Id.* (discussing current and projected worldwide crises involving food production and distribution).

73. Justin Gillis, *A Warming Planet Struggles to Feed Itself*, N.Y. TIMES, June 4, 2011, at A1, available at http://www.nytimes.com/2011/06/05/science/earth/05harvest.html?_r=1&pagewanted=all (discussing food production trends).

to feed the growing world population.⁷⁴ Over the last ten years, human consumption of wheat, rice, corn, and soy beans – the four crops relied upon most heavily to feed mankind – has outpaced production to the extent that global supplies are dangerously low.⁷⁵ Ironically, despite the complex crisis diminished food production poses, the shortage is attributable to relatively simple causes.⁷⁶

i. Lack of Farmland

The most obvious cause of declining food production is the lack of available farmland.⁷⁷ As the world population grows, land once available for farming is increasingly converted and utilized for urban development.⁷⁸ Furthermore, increasing climate change and erosion are destroying land that could otherwise be available for farming.⁷⁹ In light of such farmland depletion, the American Farmland Trust estimates that, globally, farmable land disappears at a rate of two acres per minute.⁸⁰

ii. Water Shortages & Irrigation

Water shortages leading to inadequate irrigation of crops are also a major contributing factor to the food production shortage.⁸¹ Farmers worldwide are engaged in a dire struggle to compete with expanding urbanization for access to water supplies.⁸² Due to re-

74. *Id.* (discussing growing shortages resulting from diminished farming outputs).

75. *Id.* (noting massive depletion of dietary staples).

76. Robert Roy Britt, *Global Food Shortage Becomes Urgent as Planet Warms*, LIVE SCI. (June 5, 2011), <http://www.livescience.com/14447-global-food-shortage-urgent-climate-global-warming.html> (discussing falling food production causes and warning of impending crisis should food production shortages not be remedied). Lack of available farmland, inadequate water for irrigation, and disruption of farming cycles due to climate change are thought to be the chief causes of the current food production crisis. *Id.*

77. *Id.* (noting lack of farmable land contributes to food production shortages).

78. Colvin & Co. LLP, *Global Farmland Disappearing*, FARMLAND FORECAST (June 21, 2009), <http://farmlandforecast.colvin-co.com/2009/06/18/global-farm-land-disappearing.aspx> (noting man-made causes for available farmland shortages). With the drastic projected increase in worldwide population, the conversion of farmland toward urbanization could present a disaster for food production. *See id.*

79. *Id.* (discussing nature-driven causes of farmland shortage).

80. *Id.* (noting American Farmland Trust's estimated rate at which farmland is rapidly disappearing).

81. Gillis, *supra* note 73 (noting farms worldwide are experiencing crop-killing water shortages).

82. *Id.* (discussing implications of competition among farmers and growing urban zones for access to water).

cent decreases in available water supplies caused by natural phenomena, farmers must compete with booming urban developments for access to water supplies that are already dangerously strained – and the farmers are losing.⁸³ A recent study revealed that between 2006 and 2008, California alone lost 317 square miles of available farmland, with inadequate water being a major contributing factor.⁸⁴ California, moreover, is not alone; farmers worldwide are experiencing decreases in available farmland as a result of inadequate access to water.⁸⁵

iii. Climate Change

Climate change is another major contributing factor to recent shortages in food production.⁸⁶ As the science regarding climate change is still emerging and hotly contested, this Comment will not delve deeply into the impact of climate change on food production.⁸⁷ There are, however, a few undisputable aspects of climate change that do merit mention.⁸⁸ First, rising temperatures worldwide are causing erratic weather activity.⁸⁹ Erratic weather patterns contribute to shortages in food production, as many crops require

83. *See id.* (explaining water shortage impact on competition between farmers and urban developments for access to water supplies). For a brief overview of the impact natural phenomena has on water shortages, see *infra* notes 86-92 and accompanying text.

84. Kate Campbell, *Water shortages lead to record farmland losses*, AGALERT (Apr. 27, 2011), <http://www.agalert.com/story/?id=2047> (discussing recent farmland loss in California due to inadequate water supplies). In addition to water shortages, California estimates it loses roughly one square mile of farmland every four days to expanding urbanization. *Id.*

85. *Id.* (noting farmland loss in America due to water shortages); Justin Gillis, *Food for a warming planet*, CHINA DAILY (June 12, 2011), http://www.chinadaily.com.cn/cndy/2011-06/12/content_12678118.htm (describing water shortages plaguing farmers in Mexico); Jin Zhu, *Farmland, water shortage may threaten grain output*, CHINA DAILY (Aug. 27, 2010), http://www.chinadaily.com.cn/bizchina/2010-08/27/content_11211515.htm (warning water shortages may prevent Chinese farmers from producing sufficient food); Lester Brown, *Aquifer Depletion*, ENCYCLOPEDIA OF EARTH (Jan. 23, 2010), http://www.eoearth.org/article/Aquifer_depletion (last updated May 3, 2012) (discussing water shortages' severe impact on farm production in Israel).

86. Gillis, *supra* note 73 (discussing effects of climate change on global food production).

87. *See, e.g.*, Jonathan Rowson, *Why we disagree about climate change: 30(!) wedge issues*, ACTION AND RESEARCH CENTRE (Aug. 23, 2012), <http://www.rsablogs.org.uk/2012/socialbrain/disagree-climate-change-30-wedge-issues/> (noting contested climate change issues).

88. Gillis, *supra* note 73 (noting major impacts of climate change on global food production crisis).

89. *Id.* (discussing how rising temperatures impact crop production).

regular weather patterns to subsist.⁹⁰ Second, natural disasters, which are increasing both in frequency and severity, devastate food production in disaster-affected areas.⁹¹ Finally, recent climate change has significantly contributed to both the reduction in available farmland and growing water shortages, the impacts of which have already been discussed.⁹²

2. Access

Inadequate access to food produced is also a major problem.⁹³ The idea of “food security” is that, on a global level, all people should have “at all times, both physical and economic access to sufficient food to meet dietary needs for a productive and healthy life.”⁹⁴ That almost a billion people worldwide struggle with food insecurity indicates how incredibly strained food resources have become.⁹⁵ Moreover, nearly fifty million Americans struggle with food insecurity, and an estimated seventy thousand people in the United Kingdom die each year due to malnourishment, indicating food insecurity is a crisis plaguing both wealthy and impoverished countries.⁹⁶

90. *See id.* (explaining effects of rising temperatures on weather patterns and crop stability).

91. *See id.* (discussing natural disaster impacts on food production). Notable disasters affecting crop production include, but certainly are not limited to, “floods in the United States, drought in Australia and blistering heat waves in Europe and Russia.” *Id.*

92. *See id.* (discussing how climate change impacts farmland availability and water shortage). Some theorize that climate change itself is really the driving force behind the current food production crisis, and other contributing issues such as the decreasing availability of farmland and water shortages are direct consequences of climate change. *Id.* For further discussion of the impact decreasing farmland availability and water shortages are having on global food production, see *supra* notes 77-85 and accompanying text.

93. *See* Hunger and Poverty Facts, BREAD FOR THE WORLD, <http://www.bread.org/hunger/global/facts.html> (last visited Jan. 5, 2013) (discussing worldwide hunger issues).

94. *Feed the Future*, U.S. AGENCY FOR INT’L DEV., <http://www.usaid.gov/what-we-do/agriculture-and-food-security/increasing-food-security-through-feed-future> (last visited Jan. 5, 2012) (discussing problems and goals of food security). USAid.gov defines food security by noting “[a] family is food secure when its members do not live in hunger or fear of hunger.” *Id.*

95. *See* Facts and Figures, GLOBAL FOOD SECURITY, <http://www.food-security.ac.uk/issue/facts.html#world> (last visited Jan. 5, 2013) (examining worldwide food insecurity statistics). “More people die each year from hunger and malnutrition than from AIDS, tuberculosis and malaria combined.” *Id.*

96. *See* Hunger & Poverty Statistics, *supra* note 14 (examining food insecurity problems in America); Facts and Figures, *supra* note 95 (examining UK food insecurity problems).

While food insecurity is rooted in poverty, its derivative problems have consequences far beyond economics.⁹⁷ On a humanistic level, undernourishment caused by food insecurity stunts growth and cognitive development in children; compromises immune function; increases susceptibility to illness; and if not addressed, ultimately leads to death.⁹⁸ Although food insecurity's economic impacts are not as horrid as its humanistic consequences, the monetary cost of food insecurity is serious.⁹⁹ The United States currently commits roughly 2.5 billion dollars annually to fight hunger in foreign nations.¹⁰⁰ The United States spends far more money to aid hungry families domestically; the federal food stamp program alone (one of many programs to aid the hungry) cost 54 billion dollars in 2009, with its cost projected to grow in the coming years.¹⁰¹ Despite such massive fiscal outlays, food insecurity persists as both a global and domestic problem.¹⁰²

B. Water

Although 70% of the Earth's surface is covered by water, nearly half the world's population struggles to access safe, usable water.¹⁰³

97. *Feed the Future*, *supra* note 94 (discussing causes of, and problems caused by, food insecurity).

98. *Id.* (discussing health problems caused by undernourishment); *see also* Hunger and Poverty Facts, *supra* note 93 (examining how many adults and children suffer illness or die due to food insecurity).

99. Hunger and Poverty Facts, *supra* note 93 (discussing U.S. economic aid to fight hunger in relation to U.S. budget).

100. *U.S. International Food Assistance Report 2010*, U.S. AGENCY FOR INT'L DEV., 2 (2010), available at http://www.fas.usda.gov/info/Testimony/FY_2010_IFAR_10-3-11.pdf [hereinafter *Food Assistance Report*] (breaking down and examining U.S. aid to fight hunger in foreign nations). The roughly 2.3 billion dollars the U.S. spends to fight foreign hunger is part of the approximately 33 billion dollars the U.S. commits to foreign aid annually. Joe Shortsleeve, *Curious About U.S. Aid To Foreign Countries*, CBS BOSTON (Mar. 13, 2011), <http://boston.cbslocal.com/2011/03/13/curious-about-u-s-aid-to-foreign-countries/> (discussing aid allocations in 2012 U.S. budget).

101. Charles Abbot, *U.S. food stamp cost forecast up 14 percent*, REUTERS (May 7, 2009), <http://www.reuters.com/article/2009/05/07/us-obama-budget-food-idUSTRE5465FX20090507> (discussing current and future costs of U.S. aid programs to feed hungry Americans).

102. *Compare Food Assistance Report*, *supra* note 100, at 2 (delineating U.S. aid expenditures to fight hunger in foreign countries); Abbot, *supra* note 101 (examining U.S. expenditures to fight hunger in America), *with Global Hunger*, *supra* note 70 (noting roughly 925 million people worldwide struggle with hunger); Hunger & Poverty Statistics, *supra* note 14 (discussing nearly 50 million Americans struggle with hunger).

103. *See* Statistics, *supra* note 66 (noting over 783 million people worldwide do not have access to safe water). *See also* *What on Earth Do You Know About Water?*, ENVTL. PROTECTION AGENCY, http://www.epa.gov/gmpo/edresources/water_5.html (last updated Feb. 24, 2011) (discussing Earth's aquatic composition, loca-

According to the World Health Organization (WHO) and the United Nations Children's Fund (UNICEF), approximately 783 million people worldwide, over 11% of the world's population, do not have access to safe water.¹⁰⁴ Inextricably tied to water shortages, and even more appalling, a staggering 2.5 billion people worldwide do not have access to adequate sanitation.¹⁰⁵ As a result of inadequate access to safe water and sanitation, an estimated seven hundred thousand children die every year; the average child living in a less-developed country harbors one thousand living parasitic worms in their body at any given moment.¹⁰⁶ It is unsurprising, therefore, that persons suffering an ailment caused by lack of safe water or inadequate sanitation occupy half of all hospital beds in the developing world.¹⁰⁷

In contrast to strained food resources, the water resource crisis is a problem largely confined to the developing world – for now.¹⁰⁸ While 783 million people in the developing world struggle to access safe water, the average North American uses 400 liters of water every day.¹⁰⁹ Recent studies, however, suggest fresh water around the world is consumed far faster than it can naturally be replen-

tion of water sources, and availability of water resources). Interestingly, the amount of water on Earth today is approximately equivalent to the amount of water that was on Earth when the planet formed over 4 billion years ago – so though recyclable, water is actually a finite resource. *Id.*; *Water: A finite resource*, FAO, <http://www.fao.org/docrep/u8480e/U8480E0c.htm> (last visited Jan. 5, 2012) (noting water volume on Earth is finite: 1,400 million cubic kilometers).

104. Statistics, *supra* note 66 (illustrating hardship experienced worldwide in obtaining safe water).

105. See *Human Development Report 2006*, UNITED NATIONS DEV. PROGRAMME at v, 31 (2006), available at <http://hdr.undp.org/en/media/HDR06-complete.pdf> (discussing inextricable link between water access and adequate sanitation).

106. Statistics, *supra* note 66 (analyzing health consequences of water shortages). Other diseases caused by insufficient access to safe water include: diarrhea, arsenic poisoning, cholera, fluorosis (a bone disease caused by too much fluoride), guinea worm disease, HIV/AIDS, intestinal worms, malaria, schistosomiasis (a disease in which parasitic worms enter the body through the skin), trachoma (an eye infection causing blindness), and typhoid. Common water and sanitation-related diseases, United Nations Children's Fund, http://www.unicef.org/wash/index_wes_related.html (last updated June 17, 2003).

107. Statistics, *supra* note 66 (noting half of all hospital beds in developing countries are filled by people suffering diarrhea).

108. See *id.* (illustrating vast disparity in water consumption between developed and developing countries). While the average person in developing countries uses only ten liters of water per day for drinking, cooking, and washing, the average North American uses four hundred liters per day. *Id.*

109. *Id.* (comparing water usage among developed and developing countries).

ished.¹¹⁰ Should this trend continue, it will be only a matter of time before the developed world feels the effects of the water shortage crisis.¹¹¹

C. Energy

It is no secret the world is experiencing an energy crisis; the mainstream media reminds the world daily.¹¹² While most people in developed countries conceptualize the energy crisis as an economic squeeze they feel at the gas pump, the world energy crisis impacts far more than drivers' bottom lines.¹¹³ Billions of people worldwide live in "energy poverty."¹¹⁴ Energy poverty is defined as "the lack of adequate modern energy for the basic needs of cooking, warmth and lighting, and essential energy services for schools, health centres and income generation."¹¹⁵ It is estimated that worldwide, over three billion people – more than 40% of the world's population – are energy-impoverished.¹¹⁶

It is difficult to overstate the hardships energy poverty causes.¹¹⁷ People living in energy poverty lack sufficient energy "to cook food, to heat the home, to earn a living, [and] to benefit from

110. Paul Alois, *Global Water Crisis Overview*, ARLINGTON INST. (Apr. 2007), <http://www.arlingtoninstitute.org/wbp/global-water-crisis/441#> (illustrating water usage rates geographically).

111. *See id.* (noting high water stress areas exist in America, Europe, and other developed nations in addition to developing nations); *Lower Colorado River*, PACIFIC INST., http://www.pacinst.org/topics/water_and_sustainability/colorado_river/ (last visited Jan. 5, 2013) (discussing potential desertification of once-fertile American lands resulting from water shortages and overuse). For a discussion of the impact water shortage has on farmland and global hunger issues, see *supra* notes 81-85 and accompanying text.

112. *See, e.g.*, AAA's Daily Fuel Gauge Report, AAA, <http://fuelgaugereport.aaa.com/?redirecttohttp://fuelgaugereport.opisnet.com/index.asp> (last visited Jan. 5, 2013) (reporting U.S. average daily gasoline price). *See also* Dana Blankenhorn, *The Energy Crisis Is Ending*, THE STREET (Dec. 17, 2012), <http://www.thestreet.com/story/11793177/1/the-energy-crisis-is-ending.html> (noting economic indicators suggest world energy crisis may be ending).

113. *See Energy Poverty*, *supra* note 11 (discussing how growing energy crisis causes billions of people worldwide to struggle with basic life functions, such as cooking food); David Kerley & Cait Taylor, *Higher Gas Prices Increase Costs Across the Board*, ABC NEWS (Apr. 23, 2011), <http://abcnews.go.com/Politics/rising-gas-prices-increase-costs/story?id=13444738> (noting rising gas prices are causing wide-spread problems in developed nations).

114. *Energy Poverty*, *supra* note 11 (noting billions of people worldwide do not have sufficient energy to meet basic life needs).

115. *Id.* (explaining energy poverty).

116. *Id.* (noting massive number of people worldwide living in energy poverty).

117. *Id.* (discussing several basic human necessities denied to those in energy poverty).

good health and education services.”¹¹⁸ Due to inadequate energy resources, the energy-impooverished make use of what scant energy resources they can; over 2.5 billion people worldwide are forced to use biomass, a mixture of wood, agricultural residue – and excrement – to cook their food.¹¹⁹ Lack of such basic human needs creates a vicious cycle for the energy-impooverished; because energy poverty prevents them from obtaining sufficient education and capital, they are unable to gain any political or economic influence to better their situation.¹²⁰ Due to the cyclical nature of the problem, the billions living in energy poverty utterly depend upon aid from developed nations for any hope of improving their lives.¹²¹

Energy poverty, moreover, is not a problem confined to the developing world.¹²² For instance, an estimated 2,700 people die each year in Europe because they cannot afford adequate heat for their homes.¹²³ Domestically, millions of Americans too cannot afford to adequately heat their homes during the winter months.¹²⁴ As the cost of energy continues to rise, and governments increasingly halt domestic energy aid in an effort to rein in spending, more people in the developed world are feeling the harsh impacts of energy poverty.¹²⁵

118. *Id.* (analyzing survival struggles endured by people living in energy poverty).

119. *Energy Poverty*, *supra* note 11 (noting energy poverty causes extreme hardship). Many energy-impooverished people are the same people most affected by water and food shortages. *See* Alois, *supra* note 110 (discussing crop shortages, caused by water shortages, plaguing many energy-impooverished populations).

120. *See Energy Poverty*, *supra* note 11 (discussing how lack of knowledge, capital, and influence prevent energy-impooverished people from bettering their situation). Moreover, because the energy-impooverished are devoid of capital, current energy producing powers have no incentive to help the energy-impooverished because it would require supplying energy without the promise of economic return. *See id.*

121. *Id.* (emphasizing necessity of aid from developed countries to eradicate energy poverty).

122. Sean Poulter, *Thousands dying because they can't afford heating bills. . . and green taxes are adding to the burden*, DAILY MAIL, <http://www.dailymail.co.uk/news/article-2050961/Thousands-dying-afford-heating-bills.html> (last updated Oct. 20, 2011) (illustrating struggle many Europeans face to afford heat for their homes).

123. *Id.* (noting fatal consequences in Europe arising from increasing gas and electricity costs).

124. *Northeast poor brace for difficult winter after federal government cuts home heating aid*, NJ.COM (Dec. 11, 2011), http://www.nj.com/news/index.ssf/2011/12/northeast_poor_brace_for_diffi.html (discussing inability of millions of Americans to afford heat).

125. *Id.* (analyzing interaction between ailing economies and government aid cuts in relation to energy poverty in America).

IV. DISTRIBUTIVE JUSTICE PROGRAMS

A. Anything Worth Doing is Worth Doing Right¹²⁶

Governments in developed nations have long recognized the growing problem regarding resource strain and its potentially devastating consequences.¹²⁷ The United States alone spends over 100 billion dollars annually to combat the hardships resulting from resource strain both domestically and abroad.¹²⁸ Yet despite massive expenditures by developed nations to fight resource strain and its resulting hardships, billions of people around the world continue to struggle to secure the resources necessary to survive.¹²⁹ The masses still struggling to obtain sufficient resources despite the major efforts to achieve resource stability indicate a simple but daunting truth: current distributive justice programs are failing.¹³⁰ Nevertheless, distributive justice programs are vital to world stability; without such programs, entire nations would succumb to hunger, thirst, and disease.¹³¹ Due to their indispensable nature, the only viable option to maintain global stability and long-term re-

126. There is widespread disagreement regarding the origin of this old adage.

127. See Justin Gillis, *World Food Supply: What's To Be Done?*, N.Y. TIMES GREEN: A BLOG ABOUT ENERGY AND THE ENVIRONMENT (June 10, 2011, 12:18 PM), <http://green.blogs.nytimes.com/2011/06/10/world-food-supply-whats-to-be-done/> (noting long history of American aid donated to fight hunger); WATER FOR THE WORLD ADVANCES EFFECTIVENESS OF AID FOR THE WORLD'S POOREST, WaterAid (Dec. 14, 2011), http://www.wateraidamerica.org/about_us/newsroom/water_for_the_world_advances_effectiveness_of_aid_for_the_worlds_poorest.aspx (discussing U.S. government measures to fight global water shortage and sanitation crises); Low Income Home Energy Assistance Program Fact Sheet, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, <http://www.acf.hhs.gov/programs/ocs/liheap/about/factsheet.html> (last updated Jan. 18, 2011) (describing U.S. federal assistance program helping low-income Americans obtain adequate energy).

128. See Abbot, *supra* note 101 (noting U.S. food stamp program alone costs over 50 billion dollars); About Feed the Future, FEED THE FUTURE, <http://www.feedthefuture.gov/about> (last visited Jan. 5, 2013) (noting America's 3.5 billion dollar pledge to fight hunger abroad); U.S. State Department Releases Annual Report on Water Aid, CIRCLE OF BLUE (Aug. 12, 2010), <http://www.circleofblue.org/waternews/2010/world/u-s-state-department-releases-annual-report-on-water-aid/> [hereinafter *Water Aid Report*] (noting America spent 774 million dollars in aid fighting water shortages in 2009).

129. For a discussion regarding the inability of peoples foreign and domestic to access resources necessary for survival, see *supra* notes 65-125 and accompanying text.

130. For an analysis demonstrating the failings of current distributive justice programs, see *infra* notes 133-178 and accompanying text.

131. See *infra* notes 133-141, 158-160, 168-170, 172 and accompanying text (illustrating critical role distributive justice programs play in providing food, water, and energy to millions of people worldwide, thereby allowing populations to exist without major conflict).

source sustainability is to restructure distributive justice programs to make them more effective.¹³²

B. Give a Man a Fish . . .

Contemporary distributive justice programs truly are indispensable, as millions of people worldwide depend upon them to survive.¹³³ For instance, in 2010 alone, the United States provided over 2.5 million metric tons of food to hungry people in more than seventy countries - sixty-five million starving people were fed as a result.¹³⁴ The United States operates similar aid initiatives to combat water shortages and energy poverty.¹³⁵ Current distributive justice programs do provide crucial resources to resource-strained populations.¹³⁶ In critical respects, however, current distributive justice programs provide only a momentary alleviation of strain; they catch the water in a pot instead of fixing the leak in the roof, so to speak.¹³⁷

World hunger, more than any other area of resource strain, illustrates the problems rendering distributive justice programs ineffective.¹³⁸ Wealthy nations pledge billions of dollars each year to

132. For a discussion explaining the need to restructure distributive justice programs into more effective and efficient models, see *infra* notes 65-178 and accompanying text.

133. *Food Assistance Report*, *supra* note 100, at 2 (noting needy populations' massive utilization of distributive justice programs).

134. *Id.* (discussing American food aid's success abroad).

135. See *Water, sanitation, and hygiene*, WATERAID, http://www.wateraidamerica.org/what_we_do/how_we_work/water_sanitation_and_hygiene/default.aspx (last visited Jan. 5, 2013) (discussing how WaterAid USA fights global water shortages); *Heating Assistance / LIHEAP*, PENN. DEPT. OF PUB. WORKS, http://www.dpw.state.pa.us/foradults/heatingassistanceliheap/S_000960 (last visited Jan. 5, 2013) (explaining how federal Low Income Home Energy Assistance Program aids energy-impooverished people domestically); *Renewable Energy for Development*, U.S. AGENCY FOR INT'L DEV., http://transition.usaid.gov/our_work/economic_growth_and_trade/energy/publications/projects/global_sandia.pdf (last visited Jan. 5, 2013) (discussing U.S. initiative to increasing energy access abroad).

136. See *Food Assistance Report*, *supra* note 100, at 2 (noting U.S. aid fed over 65 million people in 2010); Statistics, *supra* note 66 (noting WaterAid brought clean water and sanitation to over 3 million people in 2010-2011).

137. *Compare Food Assistance Report*, *supra* note 100, at 2 (noting provision of over 2.5 million metric tons of food to hungry populations), with Gillis, *supra* note 73 (discussing wealthy nations trending away from investing in agriculture development).

138. *Compare Food Assistance Report*, *supra* note 100, at 2 (explaining U.S. aid topped 2.3 billion dollars and fed 65 million people in 2010), with *Hunger and Poverty Facts*, *supra* note 93 (noting over 925 million people struggled with hunger in 2010). Accordingly, the 65 million people fed by U.S. aid in 2010 represents only 7% of the world's hungry.

ward fighting world hunger.¹³⁹ Wealthy nations also stockpile and export millions of tons of food to starving populations to provide immediate relief to the hungry.¹⁴⁰ This aid model of putting imported, edible food directly into the hands of the hungry, while momentarily beneficial, is not sustainable.¹⁴¹

The world's population is projected to increase by several billion people by 2050, which means there will be several billion more mouths to feed in the coming years.¹⁴² Moreover, because nearly all of the world's projected population growth is expected to occur in developing countries, a vast portion of the population increase will likely depend upon aid from wealthy nations for sustenance.¹⁴³ As current aid programs still leave nearly one billion people worldwide living in hunger, it is incredibly unlikely, if not impossible, that imported food commodities from wealthy nations will alone be able to feed future populations in developing countries.¹⁴⁴ As a result, several billion people, perhaps as much as one-third of the world's population, might struggle with hunger by the year 2050.¹⁴⁵

To make matters worse, the ability of wealthy nations to stockpile and export food may be significantly compromised by the growing destruction of farmable land.¹⁴⁶ As previously discussed, farmland is being destroyed and urbanized at an alarming rate.¹⁴⁷ If the destruction of farmland continues – as it is expected to – wealthy nations' ability to export food commodities to starving

139. See, e.g., *Food Assistance Report*, *supra* note 100, at 2 (noting America spent 2.3 billion dollars providing hunger aid during 2010).

140. See, e.g., *id.* (discussing, quantitatively, American food exports directly to hungry populations).

141. *Compare Food Assistance Report*, *supra* note 100, at 2 (noting despite multi-billion dollar outlays, U.S. aid was only able to feed 65 million people in 2010), with *Feed the World*, *supra* note 2, at 5 (illustrating projected population growth in developing countries).

142. *Feed the World*, *supra* note 2, at 2-5 (analyzing projected population increase and resulting strain on food resources).

143. See *id.* (illustrating problems hampering economic growth in developing regions where projected population increases are greatest). Combating poverty among the hungry is naturally thought to be one of the most effective means of eradicating world hunger. *Id.*

144. *Compare Global Hunger*, *supra* note 70 (discussing how current aid programs leave nearly 1 billion people living in hunger), with *Feed the World*, *supra* note 2, at 2-5 (explaining how projected population increase of 2.3 billion people in developing countries will strain world food resources).

145. See *id.* (noting nearly 100% of projected human population increase is expected to occur in regions already struggling with hunger).

146. Colvin & Co. LLP, *supra* note 78 (discussing causes and effects of increasing farmland scarcity).

147. For a discussion of the growing scarcity of available farmland, see *supra* notes 77-80 and accompanying text.

populations will be reduced simply because less food will be produced.¹⁴⁸

Another growing concern is the utilization of crops for biofuel production.¹⁴⁹ As the energy crisis grows, resources are being diverted to develop alternative energy.¹⁵⁰ Biofuel production, or generating energy from crops, is among the ripest areas of alternative energy innovation.¹⁵¹ A greater diversion of crops from human consumption to energy production also depletes food commodity levels, thereby further hampering wealthy nations' ability to directly place edible food into the hands of hungry populations.¹⁵²

It has become abundantly clear that current food aid programs will be unable to adequately combat widespread hunger or maintain food resources at sustainable levels.¹⁵³ The current structure of food aid programs will need to be maintained, on some level, to combat hunger that results when acute crises impair a population's ability to access food.¹⁵⁴ In order to ensure long-term worldwide food security, however, food aid programs must shift away from current stopgap models, and instead work to implement renewable food production systems that will deliver starving populations into a state of self-sustainability; the leak in the roof must be fixed.¹⁵⁵

148. See Colvin & Co. LLP, *supra* note 78 (discussing current and projected farmland scarcity and causes thereof); *Feed the World*, *supra* note 2, at 2, 4 (noting farmers' increasing struggle to produce food amid farmland depletion).

149. *Feed the World*, *supra* note 2, at 3, 8 (explaining how crop utilization for biofuel impacts expansion on food resources).

150. *Id.* at 3 (discussing expansion of crop utilization for biofuel production).

151. See *CropWatch: Bioenergy - Crops*, UNIV. OF NEB. - LINCOLN, <http://cropwatch.unl.edu/web/bioenergy/crops> (last visited Jan. 5, 2013) (discussing biofuel production program). Corn aptly illustrates the potential impacts of increased crop utilization for biofuel production: corn is found in breads, peanut butter, beer, wine, sugars, sweetened beverages, frostings, and various baking products. *Foods Containing Corn*, FAUQUIER EAR NOSE & THROAT CONSULTANTS, PLC, <http://fauquierent.net/allergy/allergy-corn.pdf> (last visited Jan. 5, 2013) (providing detailed list of foods and ingredients containing corn for allergy sufferers). The utilization of corn for biofuel production could increase cost of all products containing corn. See *Feed the World*, *supra* note 2, at 14 (noting potential increases in food prices resulting from biofuel crop utilization).

152. See *Feed the World*, *supra* note 2, at 3 (noting projected increase in hunger caused by crop utilization for biofuel production). The FAO expects crop utilization for biofuel production to increase the number of hungry preschool children in Africa and South Asia by 3 million and 1.7 million, respectively. *Id.*

153. *Id.* at 2-3 (discussing need to implement new food aid programs to meet projected world needs).

154. See *Food Assistance Report*, *supra* note 100, at 6-7 (discussing importance of maintaining food reserves for emergency importation to areas during acute crises). In response to the earthquake that devastated Haiti in 2010, emergency importation of food resources by the U.S. fed over 3 million starving Haitians. *Id.*

155. See *Feed the World*, *supra* note 2, at 4, 16-19 (emphasizing importance of instituting sustainable agriculture production programs). See also Gillis, *supra* note

Water aid programs are much closer to instilling sustainable supply models than their food aid counterparts.¹⁵⁶ Current water aid programs, however, do have leaks of their own, as exhibited by the billions of people worldwide lacking safe water and sanitation systems.¹⁵⁷ A 2009 report showed U.S. water aid to foreign nations focused most heavily on “small-scale, low-tech water solutions such as public taps, water purification, tube wells, hygienic latrines and septic tanks.”¹⁵⁸ While water aid programs also employ stopgap models to put safe water into the hands of the needy, focusing efforts on sustainable models offers promise that water-depleted populations will eventually move toward a state of self-sustainability.¹⁵⁹

In 2009, U.S. water aid programs “improved access to water for 5.7 million people and access to sanitation for 1.3 million [people]”¹⁶⁰ While providing water access and sanitation to seven million people is certainly admirable, that number is simply far too low.¹⁶¹ As of 2012, there were 783 million people without access to safe water and 2.5 billion people living without adequate sanitation; 5.7 million people accessing water and 1.3 million accessing sanitation amounts to helping far less than 1% of the water-needy population.¹⁶² By 2050, the amount of people needing water aid could

73 (analyzing consequences of halting investment in sustainable agricultural methods). Wealthy nations halting investment in sustainable agricultural research during the latter portion of the twentieth century slowed agricultural growth, which contributed to the current strain on food resources. *Id.*

156. *Water Aid Report*, *supra* note 128 (emphasizing water aid program’s focus on instilling sustainable aid models).

157. Statistics, *supra* note 66 (noting, despite international aid efforts, billions of people worldwide continue to lack access to safe water and adequate sanitation).

158. *Water Aid Report*, *supra* note 128 (discussing U.S. water aid strategies).

159. *Compare WaterAid publishes Sustainability framework to guide programme work*, WATERAID (May 5, 2011), http://www.wateraid.org/international/about_us/newsroom/9751.asp (explaining importance of achieving water resource sustainability in water-needy populations), *with Water Aid Report*, *supra* note 128 (noting U.S. water aid’s focus on instilling sustainable water resource systems in water-depleted populations).

160. *Water Aid Report*, *supra* note 128 (discussing successes of U.S. water aid programs).

161. *Compare Water Aid Report*, *supra* note 128 (noting in 2009, U.S. aid provided access to safe water and adequate sanitation to 5.7 and 1.3 million people, respectively), *with* Statistics, *supra* note 66 (noting 783 million and 2.5 billion people lack access to safe water and adequate sanitation, respectively).

162. *See* Statistics, *supra* note 66 (illustrating how many water-needy people are actually helped by aid). The actual percentage of water-needy people helped by U.S. aid in 2009 was only 0.21%, and that is assuming the 783 million people lacking access to safe water are encompassed within the 2.5 billion lacking access to adequate sanitation. *See supra* note 162 and accompanying text (comparing U.S. water aid efforts with resource-poor populations’ needs).

easily top 4.5 billion; even if U.S. water aid efforts increase dramatically, billions of people worldwide would still be left without access to safe water and sanitation.¹⁶³ The problem is one of pace; when projected population and consumption increases are considered, current water aid programs are perilously ineffective.¹⁶⁴

Of the distributive justice programs discussed herein, current U.S. energy assistance programs appear, at first glance, to be the most focused on combating the underlying causes of energy resource strain.¹⁶⁵ U.S. energy aid programs focus a majority of their spending on creating lasting energy infrastructure, educating energy-impooverished populations, and promoting energy research.¹⁶⁶ The problem, however, is where the energy aid is going: not to energy-impooverished people.¹⁶⁷ For instance, from 2004 to 2006, the United States spent the overwhelming majority of its energy assistance creating energy infrastructure in Iraq – infrastructure the United States destroyed.¹⁶⁸ Other than creating infrastructure in Iraq, other major U.S. energy aid expenditures funded creating en-

163. *Compare* Statistics, *supra* note 66 (noting 783 million people currently lack access to safe water and 2.5 billion people lack access to adequate sanitation), *with Feed the World*, *supra* note 2, at 5 (explaining populations in developing countries, many of which have large water-needy populations, are projected to increase by over 2 billion people by 2050). Considering the U.S. recently cut nearly 250 million dollars from its annual water aid budget, increased effectiveness is unlikely. *See Water Aid Report*, *supra* note 128 (noting recent reduction in U.S. funding to water aid programs).

164. *Compare Water Aid Report*, *supra* note 128 (noting U.S. aid was only able to help 7 million water-needy people in 2009), *with Feed the World*, *supra* note 2, at 5 (explaining nearly 8 billion people are projected to live in developing countries by 2050); Alois, *supra* note 110 (exhibiting water-needy population prevalence in many developing countries). These projections are based upon the assumption that populations will increase, but real world water scarcity levels will not. *See* David Suzuki & Faisal Moola, *Our Disappearing Water*, THE MARK (July 30, 2010), <http://www.themarknews.com/articles/1962-our-disappearing-water> (noting tangible water itself may become increasingly scarce).

165. Scott Hassell et al., *Strengthening U.S. International Energy Assistance to Reduce Greenhouse Gas Emissions and Improve Energy Security*, RAND CORP., 9-10 (2009), available at http://www.rand.org/pubs/occasional_papers/OP251.html (click "Read Online" hyperlink to access document) (illustrating U.S. energy aid's primary focus of implementing energy infrastructure, education, and promoting energy research).

166. *Id.* (explaining U.S. energy aid's core focus areas).

167. *Compare* Hassell et al., *supra* note 165, at 9-10 (illustrating most U.S. energy aid during 2004-2006 was spent implementing energy infrastructure in Iraq), *with Energy Poverty*, *supra* note 11 (explaining how billions of people in Africa and Asia lack electricity and energy to cook food).

168. Hassell et al., *supra* note 165, at 8-9 (explaining how U.S. energy aid funding is spent); Will Gruver, *Electric Power Generators and the War in Iraq*, U.S. POWER AND ENV'T (2007), http://www.uspowerco.com/articles/electric_power_generators_and_the_war_in_iraq (discussing impact of recent military conflict on Iraqi energy infrastructure).

ergy infrastructure in Afghanistan and even 100 million dollars toward funding a nuclear power plant in North Korea.¹⁶⁹ While U.S. troops undoubtedly require energy, focusing the majority of U.S. energy assistance in conflict zones does little to combat the widespread energy poverty plaguing billions of people worldwide.¹⁷⁰

Another problem with the current energy aid structure is the imbalance of aid spent between energy education and actually implementing renewable energy initiatives.¹⁷¹ From 2002 to 2006, the United States spent 631 million dollars on spreading energy education, promoting energy policy, and funding energy research.¹⁷² Meanwhile, the U.S. granted initiatives to implement renewable energy programs, and actually provide energy to the energy-impooverished, a comparably meager 22 million dollars of aid.¹⁷³ While promoting energy education and research is imperative to eradicating energy poverty, allocating only 3% of the U.S. energy aid budget (\$22 million) to actually aid the energy-impooverished is inadequate.¹⁷⁴ Although the importance of research to develop and implement sustainable energy programs cannot be overstated, it is

169. Hassell et al., *supra* note 165, at 9-10 (illustrating most U.S. energy aid from 2002-2006 was spent in regions of U.S. military conflict). According to the Rand Corporation, the 100 million dollars given to North Korea was part of a deal allowing for “nuclear-power-plant construction [in North Korea] in exchange for North Korean compliance with International Atomic Energy Agency (IAEA) requirements regarding nuclear weapons.” *Id.* at 8. As it turns out, North Korea did not comply with IAEA requirements. 9/14/11 U.S. Statement to the IAEA Board of Governors on North Korea, U.S. DEPT. OF STATE (Sept. 14, 2011), <http://vienna.usmission.gov/110914dprk.html> (discussing North Korean non-compliance with IAEA requirements).

170. See *Energy Poverty*, *supra* note 11 (discussing how billions of energy-impooverished people living outside U.S. conflict zones are in dire need of energy aid).

171. Hassell et al., *supra* note 165, at 9-10 (noting 78% of U.S. energy aid funding is spent on education, policy promotion, and research, while only 3% of U.S. energy aid funding is used to actually provide energy to energy-impooverished people).

172. *Id.* (analyzing U.S. energy aid spending).

173. *Id.* (illustrating disparity between energy aid spent to promote education, policy, and research, and energy aid spent to actually provide energy to energy-impooverished people).

174. Compare Hassell et al., *supra* note 165, at 9-10 (noting only 22 million dollars of U.S. energy aid actually provides renewable energy generation), with *Energy Poverty*, *supra* note 11 (estimating 435 billion dollars is required to improve quality of life for energy-impooverished people). The importance, however, of investing in research to produce sustainable energy models should not be minimized – it is absolutely critical to long-term energy sustainability worldwide. See Caltech Center for Sustainable Energy Research, CAL. INST. OF TECH., <http://www.ccsr.caltech.edu/> (last updated Feb. 10, 2011) (noting Nobel Laureate’s testimony regarding dire characterization of energy problems).

astounding that only 3% of U.S. energy aid is used to provide renewable energy resources to the energy-impooverished.¹⁷⁵

Ultimately, the problem with all resource strain is pace.¹⁷⁶ Every day, population growth and consumption rates place a greater strain upon natural resources than ever before.¹⁷⁷ Current distributive justice programs, though beneficial, are not structured to effectively distribute resources coextensively with growing strain, and thus cannot ensure long-term resource security.¹⁷⁸

C. Teach a Man to Fish . . .

In order to bring sufficient resources to those in need while also maintaining adequate resource reserves to ensure long-term sustainability, distributive justice programs must focus on remedying the underlying causes of resource strain.¹⁷⁹ The diversity of resources currently strained by human consumption presents a variety of complex underlying problems.¹⁸⁰ Likewise, increasing population and consumption levels, deleterious global climate change, and unproductive political posturing continually frustrate

175. See Goals, UNIV. OF LOUISVILLE, CONN CTR. FOR RENEWABLE ENERGY RESEARCH, <http://conncenter.org/about/> (last visited Jan. 5, 2012) (asserting renewable energy research can lead to global energy and economic security); Hassell et al., *supra* note 165, at 9-10 (noting how very little U.S. energy aid is actually spent providing energy to people in need).

176. See *Feed the World*, *supra* note 2, at 2 (discussing importance of resource production keeping pace with accelerated population growth and consumption levels); *Urban Water*, THE WORLD BANK, <http://water.worldbank.org/topics/water-supply/urban-water> (last visited Jan. 5, 2012) (noting providing water to growing populations is proving difficult).

177. See *Feed the World*, *supra* note 2, at 2 (discussing strain growing population places on resources); Population Clocks, *supra* note 9 (illustrating population growth rapidity on per minute basis).

178. For a discussion analyzing why current distributive justice programs are not structured to adequately supply resources to the needy, while also ensuring sufficient resource reserves are maintained to guarantee long-term sustainability, see *supra* notes 127-178 and accompanying text.

179. See FEED THE WORLD, *supra* note 2, at 10 (explaining which underlying causes must be remedied and which policy reforms are necessary to eradicate global hunger); *World Water Council Programme on strengthening Local Authorities*, WORLD WATER COUNCIL, <http://www.worldwatercouncil.org/index.php?id=2117&L=0%22onfocus%3D%22blurLink%28thi%20target%3D%20target%3D%20target%3D%20title%3D%20target%3D%20target%3D%20target%3D%20target%3D%20target%3D%20target%3D%20target%3D#c14181> (last visited Jan. 5, 2013) (discussing importance of implementing institutional water resource reform rather than focusing on momentary supply levels).

180. For a discussion regarding the multiple resources currently strained by human consumption levels, see *supra* notes 65-125 and accompanying text. The interplay among strained resources, such as how water strain affects food strain, further complicates resource strain problems. See *Feed the World*, *supra* note 2, at 11 (noting interaction among multiple resources under strain).

progress toward redressing resource strain.¹⁸¹ Nevertheless, distributive justice policy makers can and must enact programs structured to remedy the underlying causes of resource strain in order to provide resources to those in need while also maintaining sufficient resource reserves for future consumption.¹⁸²

1. Food

The crux of resolving the food crisis is two-pronged.¹⁸³ Mankind must first produce sufficient food to meet rising population and consumption levels.¹⁸⁴ Simply producing food in quantities sufficient to feed the world will not, however, be enough to eradicate hunger.¹⁸⁵ The second critical factor in solving the food crisis is ensuring that food produced is put into the hands of the hungry.¹⁸⁶ Sustainable localized food production programs, if structured and implemented correctly, can satisfy both conditions

181. *Feed the World*, *supra* note 2, at 2-5 (discussing impacts of increasing population and consumption on resource levels); Gillis, *supra* note 73 (analyzing how global climate change impacts resource strain); Mike Pflanz, *US 'failing to keep up with Britain' on aid promises*, THE TELEGRAPH (Sept. 20, 2010), <http://www.telegraph.co.uk/news/worldnews/northamerica/usa/8013514/US-failing-to-keep-up-with-Britain-on-aid-promises.html> (accusing U.S. of simply turning away from aid promises). It should be noted the recent financial crisis has undoubtedly diminished the ability of wealthy nations to supply aid. *Id.* The financial crisis, however, is not wholly responsible for unrealized aid promises by wealthy governments. *Id.* Furthermore, global opinions differ quite remarkably regarding why some nations are fulfilling their aid promises and others are not. See Lesley Wroughton, *Rich nations failing to meet aid promises to Africa*, REUTERS (May 25, 2010), <http://www.reuters.com/article/2010/05/25/africa-aid-report-idUSN248314120100525> (noting major advocacy group's determination that U.S. surpassed promised aid obligations and arguing utter failure to meet aid promises by Italy skews overall aid promise results).

182. *Feed the World*, *supra* note 2, at 15-23 (discussing potential solutions to combat world hunger and implement sustainable food production programs); *Energy Poverty*, *supra* note 11 (offering solutions to implement sustainable energy production programs to combat energy poverty); *Global Water's Approach to Worldwide Water Problems – the Rural Outreach Water Supply Program*, GLOBAL WATER, <http://globalwater.org/approach.htm#approach> (last visited Jan. 5, 2013) (discussing several practical solutions to implement sustainable water production programs in water-needy locales).

183. For a discussion of proposed solutions to remedy the world's hunger crisis, see *infra* notes 179-229 and accompanying text.

184. *Feed the World*, *supra* note 2, at 2 (noting how important producing sufficient food is to feeding mankind's booming population).

185. See *id.* at 15 (explaining food resource programs must focus both on how food is produced and how much food is produced).

186. See *id.* (discussing importance of ensuring worldwide populations have access to sufficient food resources).

needed to eradicate hunger while also ensuring adequate food supplies exist to serve future needs.¹⁸⁷

Localized, sustainable food production programs should be the goal of contemporary food aid initiatives.¹⁸⁸ Creating local, sustainable food production initiatives on a large scale would bolster world food supplies.¹⁸⁹ Furthermore, implementing such programs would result in hungry populations harvesting their own food – thereby directly providing food resources to the hungry – while also providing the opportunity for crop turnover to ensure long-term sustainability.¹⁹⁰ There are, however, significant hurdles food aid programs must overcome to create localized, sustainable food production programs on a meaningful level.¹⁹¹

The greatest challenge to successfully implementing local sustainable food production programs is cost.¹⁹² The FAO estimates that an annual average investment of 209 billion dollars is needed to successfully implement sustainable food production programs in developing countries.¹⁹³ As of 2009, developing countries were only able to invest 142 billion dollars – leaving a nearly 70 billion dollar gap between what is needed to ensure adequate global food production and what developing nations currently have.¹⁹⁴ While restructuring developing nations' budgets is necessary, there is no way to resolve the multi-billion dollar aid gap without increasing agriculture investments by wealthy nations.¹⁹⁵

In 2010, one year after developing countries faced a 70 billion dollar shortfall in the amount needed to create sufficient food pro-

187. *Id.* at 17, 21 (touting benefits of implementing localized sustainable food production programs).

188. *See id.* at 17-21 (explaining benefits hungry populations will derive, beyond adequate nutrition, from instilling sustainable food production programs). Successfully implemented local food production programs are likely to lower poverty levels, encourage further investment in critical infrastructure, and help stabilize food resources against food market price shocks. *See id.* at 2-3, 16-19.

189. *See Feed the World, supra* note 2, at 21 (noting immediate benefit localized sustainable food production programs would provide to populations currently without any food production programs whatsoever).

190. *Id.* (noting localized sustainable food production programs reduce hungry populations' struggle to access food).

191. For a discussion regarding the challenges to implementing sustainable local food production programs, see *infra* notes 192-215 and accompanying text.

192. *Feed the World, supra* note 2, at 2 (discussing funds required to successfully implement food production programs).

193. *Id.* (explaining funds needed to implement successful agriculture production programs in developing countries).

194. *See id.* (analyzing shortage of investment capital needed to implement food production programs in developing countries).

195. *Id.* (noting necessity of reallocating wealthy nations' agricultural investments to achieve global food security).

duction, U.S. food aid to developing countries totaled less than 3 billion dollars.¹⁹⁶ Even if every member of the G20 matched the amount of aid the United States donates (not one does), the aggregated effort would still not supply the requisite 70 billion dollars.¹⁹⁷ There are private philanthropic efforts that seek to increase food security, and such efforts do make a measureable difference.¹⁹⁸ Yet, even with the combination of aid from wealthy nations and private donors, amassing an additional 70 billion dollars of food-specific aid is a daunting task.¹⁹⁹

Another economic hurdle related to the need to amass aid dollars is the lack of adequate investment in agriculture research and development.²⁰⁰ Prior to the 1980s, global food production yielded sufficient food resources to feed the booming world population while also maintaining low and stable global food prices.²⁰¹ In the mid-1980s, however, wealthy nations began to cut back on agricul-

196. *Food Assistance Report*, *supra* note 100, at 2 (examining global U.S. food aid during 2010). The average U.S. inflation rate over the year 2010 was approximately 1.75%, indicating the 70 billion dollar food aid gap experienced in 2009 was likely even higher in absolute dollar amounts during 2010. See *Historical Inflation Rates: 1914-2012*, U.S. INFLATION CALCULATOR, <http://www.usinflationcalculator.com/inflation/historical-inflation-rates/> (last visited Jan. 5, 2013) (illustrating U.S. inflation rates by month).

197. See *Feed the World*, *supra* note 2, at 2 (noting enormity of aid needed to implement localized sustainable agriculture programs in developing countries); *G20 Information Centre*, UNIV. OF TORONTO, <http://www.g20.utoronto.ca/members.html> (last visited Jan. 5, 2013) (listing G20 members).

198. *High-Level Expert Forum: Investment*, FOOD & AGRIC. ORG. (Oct. 12-13, 2009), available at http://www.fao.org/fileadmin/templates/wfs/docs/Issues_papers/HLEF2050_Investment.pdf (analyzing private sector investment in developing countries' agricultural production programs). The 2009 report by the FAO notes that as of 2000, private sector agricultural investments in developing countries, though significant (16 billion dollars), was ultimately only a small portion of the total aid needed. *Id.* Additionally, the private sector investments of 2009 were, for analysis purposes, included as part of the 142 billion dollar investment by developing countries. *Feed the World*, *supra* note 2, at 2. Thus, private sector investment does not help reduce the 70 billion dollar funding gap needed to implement agriculture production programs in developing countries. See *id.*

199. See *Feed the World*, *supra* note 2, at 2, 16-19 (explaining amassing needed aid funding will require major efforts by all participants). In the midst of the current economic crisis, amassing 70 billion dollars of food-specific aid may be impossible. See Richard Haass, *What the Recession Means for Foreign Policy*, WALL ST. J., Nov. 8, 2008, at A11, available at <http://online.wsj.com/article/SB122611110847810599.html> (discussing increased likelihood of foreign aid cuts during economic downturns).

200. *Feed the World*, *supra* note 2, at 20 (noting rampant underinvestment in agricultural research despite extraordinary potential gains).

201. Gillis, *supra* note 73 (touting prior benefits of heavy agricultural research and development investment).

ture research funding.²⁰² As a result of slowing research, innovations failed to reach farmers, causing global crop growth rates to fall as populations continued to boom – a disastrous recipe that materially contributed to the current global food crisis.²⁰³

The pre-1980s food prosperity and contemporary studies suggest that recommitting to investment in agricultural research can significantly aid redressing the current food crisis.²⁰⁴ The FAO advocates “the suite of technological [research] options should be as broad as possible, ranging from new plant varieties and animal breeds better adapted to changing conditions; to farming systems with improved water- and labour-saving technologies; reduction of losses and waste; and natural resource management.”²⁰⁵ The FAO further urges that “[t]echnological advances are particularly needed in the staple crop sector. Preference should be given to technologies promising win-win combinations of enhancing productivity and sustainability [sic] managing natural resources”²⁰⁶ Though the monetary commitment necessary for research investments to materially address world hunger represents another multi-billion dollar expense, the fruits of the investment may prove invaluable to solving world hunger and maintaining long-term sustainability.²⁰⁷

Apart from aid and research dollars, the implementation of localized, sustainable food production programs must contend with dwindling availability of farmable land in the face of contemporaneous population growth.²⁰⁸ Diminishing farmland and increasing population growth present a very practical yet challenging problem: where will land be available to produce the increasing crop yield

202. *Id.* (discussing progressive cutbacks in agricultural research and development funding).

203. *See id.* (explaining how inadequate agricultural research impacts growing food crisis).

204. *See Feed the World, supra* note 2, at 19-21 (analyzing potential benefits of major agricultural research and development investments).

205. *Id.* at 21 (outlining promising fields of agricultural research and development).

206. *Id.* (noting importance of research investments in creating sustainable food production programs).

207. *Id.* at 19-20 (analyzing costs and benefits of agricultural research and development investment). During 2000, global investment in agricultural research and development amounted to 41 billion dollars, of which 59%, or 24.2 billion dollars, was contributed by the public sector. *See id.* at 20.

208. For a discussion regarding the increasing scarcity of available farmland, see *supra* notes 77-79 and accompanying text. *See also* Colvin & Co. LLP, *supra* note 78 (discussing alarming rate at which global farmland is disappearing).

necessary to feed the growing world?²⁰⁹ Because the problem is constantly exacerbated, governments must act with the utmost expediency to preserve current farmable land, stem the spread of urbanization, and revitalize exhausted farmland to productive levels.²¹⁰

Farmland preservation and revitalization will be most effectively achieved through a mixture of science and policy.²¹¹ On the research front, methods to reverse desertification and revitalize over-farmed land are well known.²¹² Likewise, government bodies have already begun formulating policy to address farmland reclamation, with current objectives including “establishing land-use regulations to protect farmland, channeling urban growth into more compact development and creating economic incentives for farming.”²¹³ Preserving farmland hinges on whether governments can successfully enact policy to keep land available for farming.²¹⁴ Simultaneous housing downturns and spikes in food prices have again made farming highly profitable, however mankind must remain committed to crop production even if economic incentives change.²¹⁵

209. See Colvin & Co. LLP, *supra* note 78 (noting currently available farmland is expected to decrease by 50% by 2050).

210. See *id.* (noting causes and dire state of global farmland destruction).

211. Zafar Adeel et al., ECOSYSTEMS AND HUMAN WELL-BEING: DESERTIFICATION SYNTHESIS 14-16 (World Resources Inst. 2005), available at <http://www.maweb.org/documents/document.355.aspx.pdf> (discussing importance of policy and scientific measures to preserve and revitalize farmland).

212. Busani Bafana, *Brown Revolution Brings New Hope*, INTER PRESS SERVICE (Jan. 10, 2012), <http://www.ipsnews.net/news.asp?idnews=106395> (advocating “holistic management” most successfully reverses desertification). Afforestation and increasing water availability also significantly reverse desertification. See Michel Malagnoux et al., *Forests, trees and water in arid lands: a delicate balance*, FOOD & AGRIC. ORG., <http://www.fao.org/docrep/010/a1598e/a1598e06.htm> (last visited Jan. 5, 2013) (discussing strategies to revitalize lands plagued by desertification).

213. Todd Miller, *Vision beyond mandate: Creating farmland protected areas in the city of Albuquerque, New Mexico*, THE URBAN IMPERATIVE (2005), available at <http://www.interenvironment.org/pa/miller.htm> (internal citation omitted) (discussing policy strategies to preserve farmland).

214. See Colvin & Co. LLP, *supra* note 78 (discussing several reasons why available farmland is rapidly disappearing).

215. See, e.g., Jennifer Ifft & Todd Kueth, *Why Are Outside Investors Suddenly Interested in Farmland?*, ARE UPDATE, UNIVERSITY OF CALIFORNIA GIANNINI FOUNDATION OF AGRICULTURAL ECONOMICS 10 (2011), available at http://giannini.ucop.edu/media/are-update/files/articles/V15N1_3.pdf (noting California farmland continued to appreciate during recent housing crisis). Over the last fifteen years, return on farmland investments beat the S&P 500. *Id.* at 9. See also *Feed the World*, *supra* note 2, at 26-27 (analyzing volatility of global food markets and critical importance of continued food production despite market swings).

While much of this Comment's analysis has been geared toward solving the hunger crisis, other resources are equally strained and present equally perilous hazards.²¹⁶ The hunger solution paradigm outlined above, however, is quite applicable to redressing other resource strain: the keys are access and production.²¹⁷ For instance, just as solving the hunger crisis requires creating localized sustainable food production, resolving water shortages requires creating localized infrastructure to deliver water on a sustainable basis.²¹⁸ Likewise, creating localized infrastructure to bring energy to the energy-impooverished is critical to eradicating energy poverty.²¹⁹ Infrastructure provides access.²²⁰ When sufficient infrastructure is created to ensure access, and consequently demand, an economic incentive is created to stimulate production to meet demand.²²¹ Based upon the consumptive habits of wealthy nations – where people use forty times more water and nearly twenty-five times more energy than people in low-income nations – there seems to be no shortage of production when a profitable demand arises.²²²

Although other factors certainly impact successful global distribution and preservation of resources, access and production are paramount.²²³ Research has and continues to make breakthroughs

216. For a discussion of other resource strain and the associated problems, see *supra* notes 6, 103-1125 and accompanying text.

217. For an analysis of how strategies for solving hunger are directly applicable to solving other forms of resource strain, see *infra* notes 218-229 and accompanying text.

218. See *Enhancing Regional Cooperation in Infrastructure Development including that Related to Disaster Management*, UNITED NATIONS, 99-100 (2006), available at http://www.unescap.org/pdd/publications/themestudy2006/12_ch6.pdf (discussing benefits of implementing sustainable water infrastructure).

219. See *Energy Poverty*, *supra* note 11 (stressing importance of implementing local energy-delivering infrastructure to eradicate energy poverty).

220. For a discussion of how infrastructure provides access, see *supra* notes 218-219 and accompanying text, and *infra* notes 221-222 and accompanying text. While food is unique in that creating the infrastructure (farms) inherently delivers the commodity (food), creating sufficient infrastructure to deliver water and energy would be equally valuable to populations in need of water and energy. See *supra* notes 218-219 and accompanying text.

221. See *Energy Poverty*, *supra* note 11 (discussing link between infrastructure, economics, and supply and demand).

222. See *Statistics*, *supra* note 66 (noting disparity between water usage in developed versus developing countries); Total energy consumption: 2011, ENERDATA, <http://yearbook.enerdata.net/> (last visited Jan. 5, 2013) (noting disparity between energy usage in high-income versus low-income countries). For further discussion of wealthy nations' over-consumptive habits, see *supra* notes 48-64 and accompanying text.

223. For an explanation of why access and production are the most important concerns regarding the distribution and preservation of resources, see *supra* notes 183-190, 216-222 and accompanying text.

in sustainability; renewable energy and water programs are among the ripest research fields.²²⁴ Furthermore, sustainability measures are increasingly becoming integral components of newly created infrastructure and production programs.²²⁵ Sustainability, however, means little to a population that has no resources in the first place; people must have a resource today before they worry about lacking it tomorrow.²²⁶ In that regard, no matter the resource, access and production are essential.²²⁷ If access creates a demand, production has the opportunity to meet it.²²⁸ Access and production are the keys to eradicating global resource strain, with access being the real lynchpin.²²⁹

V. OUTLOOK: GRIM

Unfortunately, knowing how to fix a problem and being able to fix it are two separate concepts.²³⁰ Although there is a plethora of well-reasoned solutions aimed at solving the growing resource-strain problem, the world may have already passed the tipping point.²³¹ For instance, in the aggregate, estimated costs to eradi-

224. See Hassell et al., *supra* note 165, at 9 (noting U.S. spent over 631 million dollars on energy policy, education, and research from 2002-2006); *Advanced Water Treatment Research*, BUREAU OF RECLAMATION, U.S. DEP'T OF THE INTERIOR, <http://www.usbr.gov/research/AWT/index.html> (last visited Jan. 5, 2013) (explaining U.S. research to create desalination programs generally); *Drinking Water*, UNIV. OF MO., <http://engineering.missouri.edu/water/research-areas/drinking-water/> (last visited Jan. 5, 2013) (discussing research projects aimed at producing greater amounts of clean drinking water).

225. See *Why Build Green?*, ENVTL. L. & POL'Y CENTER, <http://elpc.org/category/eco-business/greener-architecture> (last visited Jan. 5, 2013) (explaining green architecture and its benefits).

226. For a discussion of widespread resource shortages and the human costs of such shortages, see *supra* notes 65-178 and accompanying text.

227. For discussion regarding the critical importance of access and production to quenching the strain suffered by resource-poor populations, see *supra* notes 183-190, 216-222 and accompanying text.

228. See *Oil Consumption Comparison*, *supra* note 58 (illustrating oil production has risen as needed to satisfy over-consuming nations' massive demand); Statistics, *supra* note 66 (noting water production levels satisfy over-consuming countries' massive demand). For further discussion of wealthy nations' over-consumptive habits, see *supra* notes 48-64 and accompanying text.

229. For an explanation of why access to resources for resource-poor populations must be achieved to eradicate resource strain, see *supra* notes 216-222 and accompanying text.

230. For an argument why meaningful abatement of resource strain may, at this point, be beyond mankind's capabilities despite adequate knowledge of how to combat resource strain, see *infra* notes 232-255 and accompanying text.

231. For a discussion of just how serious the problem of resource strain has become, see *supra* notes 65-125. For an explanation of why resource strain may have already reached levels impossible to completely redress, see *infra* notes 232-255 and accompanying text.

cate hunger, lack of water and sanitation, and energy poverty exceed 674 billion dollars, with at least 200 billion reinvested annually.²³² In 2009, all the world's countries combined amassed only 119 billion dollars for aid of *all types* – more than 500 billion dollars short of what is required to ameliorate resource strain of food, water, and energy *alone*.²³³ When other aid costs are considered, such as providing medicine, shelter, and clothing, global aid may well be over a trillion dollars short of what is needed.²³⁴ The sad truth may be that there is simply not enough money to materially combat today's extensive resource strain.²³⁵

Furthermore, a failing in even one area can derail progress in combating strain of other resources: if water shortages are not redressed, farmers cannot properly irrigate crops to combat hunger; if energy poverty cannot be eliminated, populations cannot cook what food they can muster nor obtain the education necessary to manage sustainable farms; if adequate food resources cannot be maintained, widespread malnutrition prevents populations from being productive enough to combat water and energy shortages.²³⁶

232. See *Energy Poverty*, *supra* note 11 (estimating 435 billion dollars would be required to eradicate energy poverty); *What Would It Take: How much money would solve the world water crisis?*, LIVING WATER INT'L, <http://v9.water.cc/water-crisis/related-news/> (last visited Jan 5., 2013) (estimating as much as 30 billion dollars is needed to end water shortages worldwide); *Feed the World*, *supra* note 2, at 2 (estimating an annual investment of 209 billion dollars is needed to end world hunger).

233. *Development Assistance*, *supra* note 12 (providing breakdown of aid both by country and in the aggregate). It should be noted that during 2009, America gave over 28 billion dollars in foreign aid, nearly three times more than any other country in the world. *Id.* The next highest aid donors were France, at 12.4 billion; Germany, at 11.9 billion; and the U.K., at 11.5 billion. *Id.* The U.S. aid investment almost equaled that of France, Germany, and the U.K. combined. *Id.*

234. See National Health Expenditure Fact Sheet, CTR. FOR MEDICARE & MEDICAID SERV., <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NHE-Fact-Sheet.html> (last visited Jan. 5, 2013) (noting national health expenditures for America alone amount to over 2 trillion dollars annually). Furthermore, because America has a comparably smaller and healthier population than many developing nations, the cost of redressing illness abroad may be far greater. See *Statistics*, *supra* note 66 (noting illnesses plaguing water-depleted populations); *2011 Population Data*, *supra* note 34, at 6-13 (illustrating world population by country). As a point of fact, an Internet search cannot produce any tangible estimates for the cost that would be required to provide global healthcare.

235. For an analysis of how perilously low aid levels are compared to what is needed, see *supra* notes 232-234 and accompanying text.

236. See NAT'L RES. MGMT. AND ENV'T DEP'T, IRRIGATION WATER MANAGEMENT: IRRIGATION SCHEDULING ch. 2.1-2.2 (Food & Agric. Org., 1989), *available at* <http://www.fao.org/docrep/T7202E/t7202e05.htm> (analyzing impact water shortages have on crop production); *Energy Poverty*, *supra* note 11 (discussing how energy poverty deleteriously impacts education, healthcare, economics, and basic

To make matters worse, population and consumption levels grow daily.²³⁷ Approximately 227,000 infants were born every day in 2011, and population growth in the absolute number of people on the ground occurred almost exclusively in developing countries.²³⁸ There is simply no way aid programs can keep pace with human consumption.²³⁹ Additionally, it is unlikely policy will be able to substantially restrict urbanization in light of booming population growth; only so many people can be condensed in a locale before urban development spreads to new land.²⁴⁰ Furthermore, as more children are born, resources become even more strained, and overconsumption in developed countries has shown no signs of meaningful reduction.²⁴¹ That leaves mankind operating with perilously strained resources, and population and consumption levels constantly growing.²⁴²

Because resource strain has become so severe that distributive justice programs are insufficient remedies, the only chance mankind has to achieve global resource security is to make a global effort: wealthy nations must reduce overconsumption to bolster resource reserves and increase aid effectiveness.²⁴³ For instance, estimates show the amount of food wasted annually in the United

life necessities); *Hunger Facts*, *supra* note 4 (noting hazardous effect hunger has on population productivity).

237. See Population Clocks, *supra* note 9 (noting population and thus consumption levels are rising by the second).

238. 2011 Population Data, *supra* note 34 (examining population growth levels during 2011); *Feed the World*, *supra* note 2, at 2 (projecting future population growth to occur almost exclusively in developing countries).

239. Compare *supra* notes 232-234 and accompanying text (examining disparity between current aid levels and what is needed to ameliorate resource strain), with *supra* notes 24-47 and accompanying text (projecting future population and consumption levels).

240. Compare *supra* notes 211-215 and accompanying text (discussing proposed methods to preserve farmland by curbing urbanization and concentrating population growth in pre-existing urban developments), with *supra* notes 44-47 and accompanying text (noting world population levels are expected to rise to roughly 9 billion people by 2050).

241. See 2011 Population Data, *supra* note 34, at 2 (breaking down population growth levels on per year, per day, and per minute bases); Kevin Sack, *Study Foresees an Increase in Obesity and Its Costs*, N.Y. TIMES (Nov. 17, 2009, 12:01 AM), <http://prescriptions.blogs.nytimes.com/2009/11/17/study-projects-increase-in-obesity-and-its-costs/> (projecting large increase in American obesity rates). According to researchers, by 2018 as many as 103 million American adults – 43% of the American adult population – might be considered obese. *Id.*

242. For an analysis regarding the dire state of world resource levels in light of booming population and consumption levels, see *supra* notes 24-125 and accompanying text.

243. Compare *supra* notes 232-235 (concluding there are simply not enough aid dollars available to enable distributive justice programs alone to remedy resource strain), with *infra* notes 244-250 and accompanying text (examining impact

States alone could feed over 200 million hungry people.²⁴⁴ Likewise, recently enacted policy programs designed to reduce U.S. oil consumption, if successful, would free up over 3.5 million barrels of oil every single day.²⁴⁵ That saved oil, if put to use in the developing world, would amount to over 1.3 billion barrels of oil available annually to provide energy to the energy-impooverished.²⁴⁶

The story is the same for water: by simply changing lifestyle habits, the average American home can save thousands of gallons of water annually.²⁴⁷ And these numbers only reflect the benefit of reducing American overconsumption.²⁴⁸ If all wealthy nations took meaningful steps to stop overconsumption, the aggregate effort would produce enough resources to provide for millions, if not billions, of resource-starved people worldwide.²⁴⁹ In effect, reallocating resources that would have otherwise been over-consumed provides an additional resource reserve base.²⁵⁰ Such an additional resource reserve base would mitigate the cost and need for resource production, thereby allowing money and effort that would have been used to produce resources to instead be used to bolster access and sustainability efforts.²⁵¹ If done in concert, the combination of halting overconsumption and restructuring distributive justice programs would offer a meaningful chance to usher in a time of global

reallocating otherwise over-consumed resources could have on resource strained populations globally).

244. Hance, *supra* note 53 (discussing research studies examining American food consumption and waste). Just using the food Americans throw away annually, every single hungry person in America could be fed, and 150 million people could be fed abroad. *See id.*; Hunger & Poverty Statistics, *supra* note 14 (discussing hunger in America statistically).

245. *See Obama Proposes One-Third Cut in Oil Imports by 2025*, ENV'T NEWS SERV. (Mar. 31, 2011), <http://www.ens-newswire.com/ens/mar2011/2011-03-31-02.html> (discussing recently-enacted programs designed to dramatically reduce U.S. oil imports).

246. *See id.* (examining gross numbers of oil barrel imports and potential reductions).

247. Water Saving Tips, BEWATERWISE.COM, <http://www.bewaterwise.com/tips/01.html> (last visited Jan. 5, 2013) (illustrating water amounts saved by altering everyday habits).

248. For a discussion of the vast amount of resources that could be saved by reducing overconsumption in America alone, see *supra* notes 244-247 and accompanying text.

249. For a discussion regarding how reallocating resources Americans over-consume could feed hundreds of millions of people and provide over 1 billion barrels of oil to the energy-impooverished, see *supra* notes 244-246 and accompanying text.

250. For a discussion regarding how over-consumed resources could be put to use in resource-poor regions, see *supra* notes 241-249 and accompanying text.

251. *See id.* (noting reallocation of over-consumed resources could provide vast resource reserves for needy populations).

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resource security and sustainability.²⁵² More importantly, it may be the world's only chance to achieve resource security.²⁵³

Regrettably, the time has come to prepare for the inevitable consequences of widespread resource shortages.²⁵⁴ It is unlikely mankind will be able to halt overconsumption and restructure distributive justice programs to the degree necessary to achieve global resource security and sustainability.²⁵⁵ Overconsumption levels show no signs of falling and the obstacles to effectively restructure aid programs are staggering.²⁵⁶ The time has come to implement measures to redress, as best as possible, the sufferings of widespread resource strain.²⁵⁷ Investments to increase medical supplies needed to treat known illnesses caused by resource strain, as well as increased security to combat inevitable clashes over resources, would be two of many wise expenditures.²⁵⁸ Perplexingly, although we humans thrive because of our intelligence, we have imperiled our very existence because we are not wise enough to recognize we are taking too much.²⁵⁹ Perhaps Edmund Burke was correct when he said, "The greatest crimes do not arise from a want of feeling for

252. Compare *supra* notes 179-229 (advocating restructuring aid programs to address root causes of resource strain and implement sustainable resource production and delivery models), with *supra* notes 244-247 (examining impact reallocating current over-consumed resources could have on redressing resource strain among needy populations).

253. See *supra* notes 133-178 (explaining why current distributive justice programs are failing and will continue to fail unless restructured).

254. See, e.g., El Fatih Ali Siddig et al., *Managing conflict over natural resources in greater Kordofan, Sudan*, INT'L FOOD RESEARCH POLICY INST., v (Aug. 2007), available at <http://www.ifpri.org/publication/managing-conflict-over-natural-resources-greater-kordofan-sudan> (discussing Sudanese conflict over natural resource possession and utilization).

255. See Sack, *supra* note 241 (projecting large increase in American obesity rates); Bloom, *supra* note 1 (discussing America's extensive food wasting). For an analysis of how incredibly difficult it will be to effectively restructure distributive justice programs such that they effectively combat resource strain while also maintaining sustainable resource reserves, see *supra* notes 191-215, 230-242 and accompanying text.

256. For a discussion of wealthy nations' overconsumption see *supra* notes 48-64 and accompanying text. For a discussion analyzing the financial cost required to rectify distributive justice programs, see *supra* notes 232-235 and accompanying text.

257. For a discussion regarding the suffering of resource-poor populations, see *supra* notes 65-125 and accompanying text.

258. See COMMON WATER AND SANITATION-RELATED DISEASES, United Nations Children's Fund, http://www.unicef.org/wash/index_wes_related.html (last updated June 17, 2003) (discussing plethora of illnesses water shortages cause); *Hunger Facts*, *supra* note 4 (noting illnesses caused by hunger); El Fatih Ali Siddig et al., *supra* note 254 (discussing conflict over natural resources).

259. For a discussion of the peril caused by human resource overconsumption, see *supra* notes 48-125 and accompanying text.

others but from an over-sensibility for ourselves and an over-indulgence to our own desires.”²⁶⁰

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260. Edmund Burke Quotes, THINKEXIST, http://thinkexist.com/quotation/the_greatest_crimes_do_not_arise_from_a_want_of/181003.html (last visited Jan. 5, 2013) (noting quotes by British philosopher and statesman Edmund Burke).

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