

FOULING OUR OWN NEST: RAPID POPULATION GROWTH AND ITS EFFECT ON THE ENVIRONMENT

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Crick: All the worries about genetic engineering pale in significance with the question of what you are going to do about there being so many people in the world and the rate at which they increase.

Watson: Yes, that's what I worry about—overpopulation.¹

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1. Leon Jaroff, *Happy Birthday Double Helix: Forty years after their discovery of DNA's secret, Watson and Crick Celebrate Its Impact On the World*, TIME, Mar. 15, 1993, at 56, 59. Francis Crick and James Watson determined the structure of deoxyribonucleic acid (DNA), the giant molecule of heredity in 1953. The Nobel prize winners' discovery has helped scientists make great leaps in understanding the processes of life.

In the four decades since [their discovery], scientists, building on their knowledge of DNA's structure, cracked the genetic code, described the machinery of the living cell, identified and located specific genes and learned to transfer them from one organism to another. Their work has already transformed biology, created biotech industry and new pharmaceuticals, is beginning to affect business, industry, agriculture and food processing, and promises to change drastically the way medicine is practiced.

Id. at 56.

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I. INTRODUCTION

One of the leading factors contributing to the destruction of the earth is the reproductive “success” of *homo sapiens*.² Current world population is estimated at 5.5 billion.³ Each year, since 1988, world population has increased by approximately 90 million;⁴ and each year, approximately fifteen and one half million hectares⁵ of tropical forest vanish—an area larger than the size of England and

2. *Why Do Environmentalists Need To Worry About Population?*, WHY POPULATION MATTERS: A HANDBOOK FOR THE ENVIRONMENTAL ACTIVIST (National Audubon Society and the Population Crisis Committee with support from the Los Trigos Fund, Washington, D.C.), 1991, at 1 [hereinafter WHY POPULATION MATTERS].

3. 1993 WORLD POPULATION DATA SHEET (Population Reference Bureau, Inc., Washington, D.C.), 1993.

4. *World Estimates and Projections By Single Years: 1750-2100* (Population Reference Bureau, Inc., Washington, D.C.), 1992.

5. A hectare is “a unit of surface measure in the metric system equal to 10,000 square meters (100 acres or 2.471 acres).” NEW WORLD DICTIONARY 648 (2d ed. 1974).

Wales.⁶ By 2025, our species may increase in numbers to 9.1 billion, nearly doubling today's figure.⁷

Some economists believe the “more the merrier.”⁸ Julian Simon, an economist from the University of Maryland and the foremost proponent of this approach, asserts that population growth stimulates productivity.⁹ Simon believes, “[t]he more people . . . the more ideas and technical innovation and hence, the more growth.”¹⁰ Just how many people can the earth support? “‘Global carrying capacity’ is defined as the maximum human population that the earth can support indefinitely with a specific resource base and at a specific level of technology.”¹¹ Simon proposes that technical innovations and market forces will repeatedly intervene to prevent resource shortages and therefore suggests that global carrying capacity is virtually unlimited.¹²

Biologist Paul Ehrlich, author of the 1968 book *The Population Bomb*, disagrees:¹³ “Technology cannot provide all the answers. We are rapidly coming up against physical limits. It is not possible to build a car that gets a thousand miles per gallon.”¹⁴

6. Peter Aldhous, *Tropical Deforestation: Not Just a Problem in Amazonia*, 259 SCIENCE 1390 (Mar. 5, 1993) (citing Forest Resources Assessment 1990, U.N.F.A.O. (1982)).

7. United Nations, Department for Economic and Social Information and Policy Analysis, *World Population Prospects, The 1992 Revision*, at 6, U.N. Doc. ST/ESA/SER.A/135 (1993). The United Nation’s high projection is 9.1 billion. The medium projection is 8.5 billion, while the low projection is 7.9 billion. *Id.*

8. Sean Duke, *New Evidence Suggests Prosperity Is Linked To Fewer People*, AUDUBON ACTIVIST (Nat’l Audubon Soc’y, N.Y., N.Y.), Jan./Feb. 1993, at 10 (quoting Julian Simon, University of Maryland).

9. *Id.*

10. *Id.*

11. *Global Carrying Capacity: How Many People?*, POPULATION REP. (Population Information Program, Center for Communication Programs, The Johns Hopkins University, Baltimore, Md.), May 1992, at 23.

12. Duke, *supra* note 8, at 10. Patricia Waak, director of National Audubon Society’s Population Program, disputes this assertion. “The U.S. has lost more wetlands, forests, and pristine habitat than any country in the world. . . . Is this what technology can do for us?” *Id.*

13. *Id.* at 10-11.

14. *Id.* A recent joint statement of the U.S. National Academy of Sciences and the Royal Society of London, supports Ehrlich’s position: “If current predictions of population growth prove accurate and patterns of human activity remain unchanged, science and technology may not be able to prevent either irreversible degradation of the environment or continued poverty for much of the world.” *Id.* at 11. *But cf. id.* (noting that economic

Ehrlich predicts that mass starvation would result from too many people trying to exist on too little land and concludes that people must alter their patterns of consumption in order to prevent such a catastrophic consequence.¹⁵

As early as 1763, English clergyman and economist Thomas Malthus raised concerns about population and its effect on the environment.¹⁶ In an essay originally published anonymously, Malthus argued that as the number of inhabitants on the Earth increases, the amount of resources will decrease, causing famine, disease, and in general, a reduced quality of life.¹⁷

Malthus proposed that if human population remained unchecked, it would double and exceed the earth's ability to produce food.¹⁸ Whether or not Malthus' prediction will materialize remains to be seen. It is notable, however, that since 1984, population growth has exceeded grain production.¹⁹

Although population growth alone is not responsible for the continual degradation of our environment,²⁰ it is clear that there is a strong link between the increasing numbers of human beings inhabiting the earth and the earth's environmental problems. This

development can occur where population growth is stable, as for example in the Platte River region in Nebraska).

15. *Id.* at 10. Ehrlich states, "Population is a drag on per capita income growth. . . . It means we must pour more capital into people, which makes economic growth more difficult by putting more pressure on non-renewable resources." *Id.*

16. *Id.*

17. See generally THOMAS ROBERT MALTHUS, AN ESSAY ON THE PRINCIPLE OF POPULATION AS IT AFFECTS THE FUTURE IMPROVEMENT OF SOCIETY (1798).

18. Patricia Waak, *To Live as a Global Society: Empowering People For a Healthy Earth, Human Population and the Environment*, INTEGRATION, Dec. 1991 at 2.

19. *Population and the Environment: Impacts in the Developing World, Questions and Answers* (Population Action International, Sharon L. Camp ed., Washington, D.C.), 1992, at 2 [hereinafter *Questions and Answers*]. Illustrative of this point is the fact that although China had a record harvest in 1990 "the annual per capita output has been lower than the 1984 level due to the constant growth of population." *Id.* For a discussion of various causes of the decline in per capita food production, see *id.*

20. Other factors include but are certainly not limited to "excessive consumption, waste, mismanagement, and ignorance about the ecological costs of new technologies. . . ." WHY POPULATION MATTERS, *supra* note 2, at 1.

Other sources of environmental damage in developing nations include "poverty . . . skewed systems of land tenure, uncontrolled commercialization of natural resources, inadequate control of polluting industries, destructive farming techniques, and urbanization." *Regional Overview*, POPULATION REP. (Population Information Program, Center for Communications Programs, The Johns Hopkins University, Baltimore, Md.), May 1992, at 7.

Article explores the nature of the link, as well as the environmental impacts of rapid population growth.²¹ Additionally, this Article examines population policies of the United States and other countries and their effects on the environment. Finally, the Article considers various recommended actions for dealing with population and the environment.

II. THE LINK

There are several ways in which population growth endangers the environment:

- Each additional person adds an increment to the demand on the environment, making the situation a little worse.
- Each person's demand is multiplied to varying degrees by the person's affluence and by the environmental impact of technologies involved in production and consumption.
- The high population density of large cities, resulting partly from high birthrates, overwhelms water supply, sanitation, and waste disposal systems.
- The rapid pace of population growth leaves little time to promote environmental safeguards and to introduce new technologies. Solving environmental problems is more difficult and more expensive when populations grow quickly.
- The steadily increasing burden of growing population can eventually overload natural systems, causing their collapse.²²

21. *Challenging the Planet: Connections Between Population and The Environment* (Population Action International, Washington, D.C.), 1993 at 8 [hereinafter *Challenging the Planet*]. Researchers at the University of Michigan's Population-Environment Dynamics Project and the International Institute for Applied Sciences in Austria posit that population growth rarely directly impacts the environment. Instead, the impact manifests itself through social institutions, consumption patterns, and technologies. *Id.*

22. *The Environment and Population Growth: Decade for Action*, POPULATION REP. (Population Information Program, Center for Communication Programs, The Johns Hopkins University, Baltimore, Md.), May 1992, at 2 [hereinafter *The Environment and Population*].

In their recent book, *The Population Explosion*, Drs. Anne and Paul Ehrlich of Stanford University develop an equation to demonstrate how population growth and consumption affect the environment. The equation asserts that Environmental (I)mpact equals (P)opulation size times the average person's (A)ffluence or consumption levels times (T)echnology's polluting effects (I=PAT).²³ Admittedly, while there is no single cause of environmental problems, and the equation ignores important factors such as resource distribution,²⁴ the formula does demonstrate how growth in population increases environmental impact at any level of technology and consumption.²⁵

Experts have proposed four additional theories regarding the connection between population change and environmental degradation: 1) Market-centered theory (neoclassical economics); 2) Theories centered on fixed resources (classical economics and natural science perspectives); 3) Dependency perspectives; and 4) Population as an intermediate variable.²⁶ Although these theories are not

Growth]. For specific examples of where population growth caused natural systems to collapse, see *infra* note 26 and accompanying text.

23. PAUL R. EHRLICH & ANNE H. EHRLICH, *THE POPULATION EXPLOSION* 320 (1990).

24. *Questions and Answers*, *supra* note 19, at 1-2. See also *id.* at 22 (citing *Population and Land Use Changes in Honduras: A Regional and Community Level View*, WORKSHOP ON POPULATION CHANGE AND LAND USE IN DEVELOPING COUNTRIES (National Academy of Sciences/Committee on Population, Washington, D.C.), Dec. 1991. Between 1970-1989, the population of Honduras doubled. The authors examined whether or not this doubling was the direct cause of soil erosion, watershed deterioration, deforestation, and the destruction of coastal resources. They conclude that "population increase is not a sufficient explanation; a more important factor has been land inequality and the investment patterns of large landowners." *Id.*

25. *Questions and Answers*, *supra* note 19, at 1-2. See generally *The Population-Resource Equation, Population And The Environment: The Challenges Ahead* (United Nations Population Fund, N.Y., N.Y.), 1991, at 12-13 (discussing the I=PAT equation) [hereinafter CHALLENGES AHEAD]. See also *The Environment and Population Growth*, POPULATION REP. (Population Information Program, Center for Communication Programs, The Johns Hopkins University, Baltimore, Md.), May 1992, at 3. (discussing the I=PAT equation).

26. *Population and the Environment: Impacts in the Developing World, Abstracts and Excerpts from Recent Scientific Studies, by Topic* (Population Action International, Sharon L. Camp ed., Washington, D.C.) 1992, at 17 (citing Carole L. Jolly, *Four Theories of Population Change and the Environment*, Address Before the Population Association of America (Mar. 21-23, 1991)). Market-centered theory advances that market responses will allow resource alternatives and technology to sustain population. In theories concentrating on fixed resources, fertility reduction is most important; each individual has a negative impact on the environment and populations exceed carrying capacities of their local environments. Dependency perspectives focus upon population growth as symptomatic of

mutually exclusive, they “provide a framework to analyze resource allocation, scale, and distribution, and population growth’s effect on these three factors.”²⁷

A dearth of empirical evidence is a major reason for the lack of consensus regarding the impact of rapid population growth on the environment.²⁸ However, although much remains to be learned about the connection, “few experts suggest that rising human numbers are unrelated to the expanding environmental problems of the developing world. . . .”²⁹ History provides further evidence of the link. One can look to the Anasazi Native Americans of the Southwestern United States and the Mayan civilizations of Central America. Many archaeologists assert that these two cultures disappeared as a result of rapid population and natural resource degradation.³⁰

III. IMPACTS

“[R]apid population growth burns nature’s candle at both ends” generating more consumers while reducing natural productivity.³¹ Although nature is resilient and degraded renewable resources have the capacity to restore themselves,³² when the population exploits resources faster than the resources can regenerate, there is grave danger of over exploitation.³³ Although some experts

unequal distribution and poverty which in turn leads to land degradation. Theorists who view population as an intermediate variable assert that population growth exacerbates the effects of more “ultimate causes” of environmental degradation: poverty, warfare, polluting technologies, etc. *Id.*

27. *Id.* at 17-18.

28. *Abstracts and Excerpts from Recent Scientific Studies, by Topic, in Questions and Answers*, *supra* note 19, at 17 (citing R. Paul Shaw, *The Impact of Population Growth on Environment: The Debate Heats Up*, 12 ENVTL. IMPACT ASSESSMENT REV. 11, 11-36 (1992)).

29. *Questions & Answers*, *supra* note 19, at 7.

30. Waak, *supra* note 18, at 2. Expanded consumerism and urbanization which led to the fall of Rome provides, perhaps, another example. *Id.*

31. *How Population Growth Affects the Environment*, POPULATION REP. (Population Information Program, Center for Communication Programs, The Johns Hopkins University, Baltimore, Md.), May 1992, at 11.

32. *Id.* After overgrazing, grasslands take one year to grow back; it may take twenty to 100 years for forest ecosystems to grow back; to replenish topsoils, it takes hundreds of years; and it takes between one and thousands of years to refill aquifers. *Id.*

33. *Id.* Some authorities believe that soils and fish are already over exploited. *Id.*

believe that technological innovations will be the panacea,³⁴ it is quite possible that our rapidly growing population will lead to scarcity problems before technology is able to respond with alternatives.³⁵

Rapid population growth exacerbates current strains on the environment.³⁶ Environmental stress is apparent in nearly every area of human interaction with the environment.³⁷ Additionally, "it is clear that economic development cannot continue if key resources are depleted."³⁸ This section will examine several impacts population growth has upon various natural resources, urban growth, and human health.

A. *Agriculture, Food Supply, and Land Degradation*

Simply put, each person has minimum food requirements, and consequently, as population increases, so does the total amount of food needed.³⁹ Growing population pressure is changing patterns of land use necessary for food production.⁴⁰ In order to accommodate the growing population's demand for food, farmers in many developing countries are forced to cultivate land that is hilly, rocky, or dry, or areas with weak soils.⁴¹

Overgrazing, deforestation, inefficient farming practices, urbanization, pollution, as well as rapid population growth, contribute to the deterioration of soil.⁴² These factors have damaged more than one-tenth of the earth's fertile soil since 1945, threatening the world's food supply.⁴³ According to a recent report, production of meat, fish and grains per person has declined to a point where the earth's

34. See, e.g., Duke, *supra* note 8, at 10 (discussing the theory of Julian Simon, a University of Maryland economist).

35. See *The Environment and Population Growth*, *supra* note 22, at 3.

36. CHALLENGES AHEAD, *supra* note 25, at 15.

37. *Agriculture and Population Pressure*, POPULATION REP. (Population Information Program, Center for Communication Programs, The Johns Hopkins University, Baltimore, Md.), May 1992, at 11.

38. CHALLENGES AHEAD, *supra* note 25, at 15.

39. *Agriculture and Population Pressure*, *supra* note 37, at 11.

40. *Id.* at 12.

41. *Id.* In densely populated parts of Indonesia, for example, peasants are cultivating steep slopes; farmers in marginal areas of Africa are forced onto semi-arid rangelands previously used to support nomadic tribes. *Id.*

42. *Food Supply Crisis*, THE ZPG REP. (Zero Population Growth, Washington, D.C.), Nov. 1992, at 2.

43. *Id.*

carrying capacity may have been reached, and nearly one in five people is malnourished.⁴⁴

Desertification presently threatens one third of the Earth's land surface.⁴⁵ This threat affects at least 850 million people.⁴⁶ Without major conservation efforts, the United Nations Food and Agriculture Organization (FAO) estimates that by the end of the next century, developing countries may experience a thirty percent fall in agricultural production, whereas their populations may increase four to six times.⁴⁷ Even if increases in human numbers is not the main cause of hunger and malnutrition, rapid growth exacerbates environmental problems and poverty that prevent many from buying and growing an adequate supply of food.⁴⁸ Lester Brown, president of Worldwatch states, "The bottom line is that the world's farmers can no longer be counted on to feed the projected additions to our numbers."⁴⁹

B. *Forests*

Between 1971 and 1986, forests decreased by 125 million hectares.⁵⁰ Tropical forests are disappearing by approximately 15.4

44. Brad Knickerbocker, *The Balance Between Food and People Has Become Threatened*, CHRISTIAN SCIENCE MONITOR, Jan. 18, 1994, at 10. The article discusses a report by Worldwatch Institute, "State of the World." The report reveals that "[b]etween 1989 and 1993, the fish catch per person dropped [seven percent]; per capita grain output by [1993] had fallen [eleven percent]." *Id.*

45. CHALLENGES AHEAD, *supra* note 25, at 16.

46. *Id.* About \$30 billion is lost each year in terms of lost production while the cost of reviving desertified land for purposes of production is often prohibitive for most developing countries. *Id.*

47. Sharon L. Camp, *Population: The Critical Decade*, 90 FOREIGN POLICY 126, 129 (1993). The FAO also estimates that eighteen percent of all cropland could be completely lost if conservation measures are not taken in time. CHALLENGES AHEAD, *supra* note 25, at 15-16.

48. Camp, *supra* note 47, at 130.

49. Knickerbocker, *supra* note 44, at 10. Cf. RONALD BAILY, ECO-SCAM: THE FALSE PROPHETS OF ECOLOGICAL APOCALYPSE (1993) (disputing the assertions in Knickerbocker's article).

50. CHALLENGES AHEAD, *supra* note 25, at 16. This figure is probably underestimated considering encroachment upon forest lands. *Id.* The Philippines only have eight percent of the forests it had fifty years ago. *Forests*, POPULATION REP. (Population Information Program, Center for Communications Programs, The Johns Hopkins University, Baltimore, Md.), May 1992, at 15 [hereinafter *Forests*].

million hectares per year.⁵¹ Deforestation is a result of population growth.⁵² Growing numbers of persons who need fuel for heating and cooking lead to increased pressure on forest land.⁵³ Increased slash-and-burn practices and intensive shifting cultivation are also indirect results of population pressures.⁵⁴ Although shifting cultivation is sustainable if the forest is left to regrow over ten to twenty years, increases in population densities force people to return to the same area of land more often, which does not allow the forest enough time to regenerate.⁵⁵

Forests are essential for many ecological functions: retaining soil and absorbing water; helping to prevent floods, landslides, and erosion; regulating world climate; providing ingredients for commercial and industrial products; and housing plant and animal species.⁵⁶ Losing forests may lead to serious consequences.

C. Biodiversity

As forests disappear, so do homes for various plant and animal species.⁵⁷ The fauna and flora are genetic resources “of inestimable value to human welfare.”⁵⁸ It is thought that the majority⁵⁹ of undiscovered species of plants and animals⁶⁰ reside in tropical moist forests that encompass only about seven percent of the Earth’s

51. Aldhous, *supra* note 6, at 1390. By the year 2010, only four of the seventy-six countries that now have tropical forests may have large stands of undamaged forests left. *Forests*, *supra* note 50, at 15; *see generally* Jacqueline Sawyer, *Tropical forests—multiple use, not multiple abuse*, 39 EARTHWATCH 4-5 (1990).

52. *Forests*, *supra* note 50, at 15 (“Population pressures contribute directly to deforestation.”); *see also* CHALLENGES AHEAD, *supra* note 25, at 16 (“[G]rowing populations may be responsible for as much as 80 per cent of the loss of forest cover.”).

53. *Forests*, *supra* note 50, at 15-16. *See also* Camp, *supra* note 47, at 130 (discussing deforestation); Don Hinrichson, *People and forests: what future?*, 39 EARTHWATCH 1-3 (1990) (discussing the effects of logging).

54. *See Forests*, *supra* note 50, at 15 (Slash-and-burn or shifting cultivation is a practice whereby people “clear small plots, cultivate them for two to three years, and then move on to repeat the process.”); *see also* Terry Rambo, *Slash-and-burn farmers: villains or victims?*, 39 EARTHWATCH 10 (1990).

55. *Forests*, *supra* note 50, at 15.

56. *Id.* at 16.

57. CHALLENGES AHEAD, *supra* note 25, at 17.

58. *Id.*

59. Fifty to eighty percent of all species live in tropical moist forests. *Id.* at 18.

60. Experts have identified about 1.7 million plants and animals species, but it is estimated that 10 to 30 million species exist. *Id.* at 17-18.

surface.⁶¹ A recent ecological study suggests that much of the loss of unique plants and animals is occurring in eighteen “hot spots” of biological diversity: fourteen tropical forests and four Mediterranean-type zones.⁶² Increasing development from human populations are mainly to blame.⁶³

Further, the loss of biodiversity can strain the world’s ability to feed growing numbers of people.⁶⁴ It is estimated that there are 80,000 species of edible plants. While only 200 have been cultivated, only twelve are currently important staples.⁶⁵

D. *Freshwater*

“Less than [one percent] of the earth’s water is available for human consumption.”⁶⁶ Indirect consequences of population growth, such as deforestation and poor land and water management, adversely affect water resources.⁶⁷ For example, deforested land, because it retains less moisture, leads to erosion and downstream flooding.⁶⁸

There is also a direct connection between population growth and the amount of water available per capita.⁶⁹ At least twice this century water consumption has doubled as a result of population growth and inefficient use of water resources.⁷⁰ Water consumption

61. *Id.* at 18.

62. CHALLENGES AHEAD, *supra* note 25, at 18. These areas contain “exceptional concentrations of endemic species . . . [and perhaps] nearly [twenty percent] of the Earth’s plant species on only .5 [percent] of the Earth’s land surface.” *Id.*

63. *Id.*

64. *Freshwater*, POPULATION REP. (Population Information Program, Center for Communication Programs, The Johns Hopkins University, Baltimore, Md.), May 1992, at 16 [hereinafter *Freshwater*].

65. CHALLENGES AHEAD, *supra* note 25, at 18.

66. *Freshwater*, *supra* note 64, at 16. For an in-depth discussion of the relation between population growth and water, see ROBERT ENGLEMAN & PAMELA LEROY, SUSTAINING WATER; POPULATION AND THE FUTURE OF RENEWABLE WATER SUPPLIES (Population Action International, Washington, D.C., 1993).

67. See CHALLENGES AHEAD, *supra* note 25, at 18.

68. *Id.* As a result of deforested upland watersheds in the Indian sub-continent, for example, millions are forced to subsist on eroded lands and areas prone to floods have “increased from 19 million hectares in 1960 to 60 million hectares by 1984.” *Id.*

69. *Freshwater*, *supra* note 64, at 16; see also CHALLENGES AHEAD, *supra* note 25, at 18 (“Since water resources are finite . . . [] more people means less water per capita . . . [T]he International Hydrological Programme of UNESCO indicate[s] that . . . in 1850 freshwater resources were . . . over 33,000 cubic metres per person per year, [whereas] today the annual amount available has shrunk to only 8,500 cubic metres per person.”).

70. *Id.* at 19.

could double again within the next two decades.⁷¹ It is currently estimated that eighty countries with forty percent of the world's population experience water shortages at some time during every year.⁷²

Water quality is also an issue. The more people, the greater the need for sanitation. As of 1990, 1.7 billion people worldwide had no access to sanitary waste facilities.⁷³ Fecal wastes cause oxygen depletion in water killing fish, plants, and other animals.⁷⁴ Moreover, increasing demand for food and goods leads to increased industrial and agricultural waste, which is often discharged into rivers, lakes, or aquifers.⁷⁵ By the end of this decade, if water pollution continues at current rates, nearly one-quarter of the earth's supply of freshwater could be unsafe for human consumption.⁷⁶

E. Oceans

Population pressures produce several dangers for the earth's oceans. Growing populations on or near the coasts⁷⁷ increase the demand for food, resulting in overfishing.⁷⁸ Coastal development is another damaging result. This development is reducing the oceans' productive capacity⁷⁹ and damaging natural ecosystems.⁸⁰

71. *Id.*

72. ENGLEMAN & LEROY, *supra* note 66, at 18.

73. *Id.* at 30. It is estimated that the number of urban dwellers without fresh water and sanitation services will increase by eighty percent by the year 2000. *Challenging the Planet*, *supra* note 21, at 3.

74. *Freshwater*, *supra* note 64, at 17.

75. *Id.*

76. *Id.* It is presently estimated that nearly 1 billion people do not have access to safe water. *Id.* See also *Threat Seen to Oceans' Role in Human Survival*, N.Y. TIMES, Nov. 30, 1993, at C4 (discussing a recent report by Worldwatch Institute that states that "the slow, persistent incursions of coastal habitat destruction, the relentless push to increase the global fish catch, and the dispersed sources of pollution that ultimately end up in the sea" are even more destructive to the oceans than catastrophic oil spills.) [hereinafter *Threat Seen*].

77. Approximately sixty percent of the world's population lives within 100 km of ocean coasts. *The Oceans*, POPULATION REP. (Population Information Program, Center for Communication Programs, The Johns Hopkins University, Baltimore, Md.), May 1992, at 19 [hereinafter *The Oceans*].

78. *Id.*

79. *Id.* These developments destroy the coastal areas that function as hatcheries for ninety percent of the world's fish catch. *Id.*

80. *Id.* Pollution and dredging and filling of wetlands to accommodate further development contribute to the harm. *Id.*

Coastal settlements wreak environmental havoc: “[S]ewages discharged into upland rivers, sediment from tree cutting, and fertilizer and pesticide run off eventually reach the oceans.”⁸¹ Apart from providing food, oceans serve other important functions: regulation of climate; protection against extreme temperature fluctuations; absorption of carbon dioxide; and housing for a great number of animal species that inhabit coral reefs.⁸² The pollution that results from increases in population detrimentally affects all of these functions. As population grows, the problems will likely worsen.⁸³

F. *Urban Migration*

In 1950, eighteen percent of the world population lived in urban areas.⁸⁴ As of mid 1990, forty-three percent lived in urban areas.⁸⁵ Most of the urban population increase is occurring in developing countries⁸⁶ and is mainly due to increasing rural poverty.⁸⁷ Rising urban population strains city services⁸⁸ and further stresses sanitation difficulties.⁸⁹ For example, in many parts of Southeast Asia, rivers have become “virtual open sewers and many

81. *Id.*

82. *Id.* The sea has supplied humanity with anti-leukemia drugs from sea sponges, bone-graft material from coral, diagnostic material from red algae. *Threat Seen, supra* note 76. Already ten percent of the coral reefs have been destroyed and another sixty percent are currently threatened. *Most Ocean Pollution Starts on Land*, CHRISTIAN SCIENCE MONITOR, Nov. 29, 1993, at Features Section 17.

83. *The Oceans, supra* note 77, at 19. A recent paper by Peter Weber, researcher for the Worldwatch Institute, entitled “Abandoned Seas: Reversing the Decline of the Oceans,” reveals that thirty-three percent of all the pollutants entering into the oceans worldwide come via emissions from land-based sources, and forty-four percent from rivers and streams. *See Most Ocean Pollution Starts on Land, supra* note 82.

84. *Population Impacts on Quality of Life, in CHALLENGES AHEAD, supra* note 25, at 21.

85. U.N. Dep’t. of Econ. and Soc. Info. and Pol’y Analysis, World Urbanization Prospects, the 1992 Revision at 3, U.N. DOC. St/ESA/SER.A/136, U.N. Sales No. E.93.XIII.II (1993). The United Nations predicts that by 1995, the figure will rise to forty-five percent; to fifty percent in 2005; and that in 2025, more than three-fifths of the world population will live in urban areas. *Id.*

86. *Id.* In 1990, sixty-one percent of the world’s urban population lived in developing countries. *Id.* In Latin America, Africa, and parts of Asia, there are an estimated 10 million “environmental refugees” moving from rural to urban areas. Camp, *supra* note 47, at 130.

87. Camp, *supra* note 47, at 130.

88. *Id.* at 130-31.

89. *See supra* notes 73-74 and accompanying text.

waterways flowing through metropolitan areas are biologically dead.”⁹⁰

It is estimated that 100 million people were migrants in 1992—double the number of migrants in 1989.⁹¹ Of that 100 million, 37 million left their homes to escape violence, drought or environmental destruction.⁹² As population growth increases, international migration is expected to increase as well. Slowing population growth is cited as one of “the only effective means of reducing migration pressure over the long term.”⁹³ Without such action, according to Dr. Nafis Sadik, the executive director of the United Nations Population Fund, current migration may become the “human crisis of our age.”⁹⁴

G. Poverty

Over one billion people, approximately one-fifth of the world’s population, live in poverty.⁹⁵ Poverty, population growth, and environmental degradation are “mutually reinforcing phenomena.”⁹⁶ Economic struggles often force those in poverty to “destroy their surroundings by cutting down trees, overworking the soil, overgrazing rangelands, and overfishing.”⁹⁷ Further, attempts by developing countries to escape poverty also damage the environment. Efforts to raise foreign currency often lead to an exploitation of timber and cash crops.⁹⁸

90. Camp, *supra* note 47, at 131.

91. *Wave of Migration Troubles UN*, DETROIT FREE PRESS, July 6, 1993, at 7A. This estimate comes from the UN Population Fund annual report cited in the news article. *Id.*

92. *The Human Crisis of Our Age*, BOSTON GLOBE, July 1, 1993, at 62.

93. *European Efforts to Halt Immigration Questioned*, CHI. TRIB., July 16, 1993, at 7.

94. *Id.*

95. *Regional Overview*, POPULATION REP. (Population Information Program, Center for Communication Programs, The Johns Hopkins University, Baltimore, Md.), May 1992, at 7 [hereinafter *Regional Overview*]. See also *Population Impacts Quality of Life*, in CHALLENGES AHEAD, *supra* note 25, at 21 (“The number of absolute poor is now over 1 billion and growing.”).

96. *Issues and Answers on Population and Environment*, in WHY POPULATION MATTERS, *supra* note 2, at 5. Environmental problems are exacerbated by poverty and underinvestment, which is aggravated by unmanageable foreign debt. *Id.*

97. *Regional Overview*, *supra* note 95, at 7. See also *Issues and Answers on Population and the Environment*, in WHY POPULATION MATTERS, *supra* note 2, at 5 (citing overcropping and overgrazing).

98. *Regional Overview*, *supra* note 95, at 7. Industries often rationalize excessive releases of harmful pollutants by asserting that they are creating more jobs and generating

*H. Health*⁹⁹

The United Nations estimates that 10 to 25 million people die each year as a result of diseases caused or aggravated by polluted drinking water.¹⁰⁰ Efforts to feed growing numbers of people result in expanded agriculture, posing risks to worldwide health. For example, land irrigation is siphoning off safe drinking water.¹⁰¹ Expanded agriculture is a major cause of deforestation. Deforestation adversely affects world health by forcing traditional healers to travel farther in order to retrieve medicinal plants.¹⁰² The destruction of biodiversity also may destroy many species that have possible medicinal benefits. A representative from the United Nations noted, "A cure for AIDS may have already been thrown out."¹⁰³

Another threat to health arises from pregnancy and the birth process itself. Nearly 500,000 women die annually from complications during pregnancy or while giving birth. Nearly ninety-nine percent of these women are from developing countries. At least 200,000 more die from illegal or poorly performed abortions.¹⁰⁴ If

more revenue. In addition, modern intensive farming technologies often supplant traditional land conservation techniques. *Id.* For more on poverty and the environment, see generally Sharon Camp, *Population Pressure, Poverty and the Environment* (Population Action International, Washington, D.C., 1990).

99. See generally *A Polluted Environment: Hazardous to Your Health*, POPULATION REP. (Population Information Programs, Center for Communication Programs, Johns Hopkins University, Baltimore, Md.), May 1992, at 18 (discussing the effects of crowding, water pollution and water scarcity, air pollution, lead, and hazardous wastes on health).

100. Steve Mirsky, *Severe Worldwide Health Problems Tell of Overburdened Environment*, AUDUBON ACTIVIST (Nat'l Audubon Soc'y, N.Y., N.Y.), Jan./Feb. 1993, at 11. Each year four million children die from diarrheal diseases mainly stemming from contaminated food and water. *Id.* Further, according to Johns Hopkins University Population Information Program, human waste in water is "responsible worldwide for 500 million cases of amoebic dysentery, 70 million of typhoid, 250 million of giardiasis, 100 million of gastroenteritis, and 300,000 of cholera." *Id.*

101. *Id.*

102. See *id.* It is estimated that traditional medicinal healers supply primary medical care to at least 1.5 million people throughout the world. *Id.*

103. *Id.* (quoting Noel Brown of the United Nations). A pharmaceutical scientist for the University of Chicago estimates that as many as 600 undiscovered medicines may disappear from the earth by the year 2000. *Id.*

104. *Population Impacts On Quality of Life*, in CHALLENGES AHEAD, *supra* note 25, at 20. See also Mirsky, in AUDUBON ACTIVIST, *supra* note 100, at 11 (noting also that approximately 500,000 women die yearly from pregnancy complications and that 200,000 women die from illegal or failed abortions).

birth control were readily available, many of these deaths could be prevented.¹⁰⁵

IV. POPULATION STABILIZATION AS A PRIMARY APPROACH TO CURBING ENVIRONMENTAL DEGRADATION

The priority of population control as a measure to approach environmental degradation is a debated topic. For example, some argue that the problem should be attacked by reducing overconsumption, *i.e.*, that a pattern of wasteful lifestyles, not population growth, is the core of the issue.¹⁰⁶

It is what the rich do that counts, not what the poor do, however much they do it. That is why it is imperative that the rich change their life-styles. A change in the life-styles of the poor only, apart from being unfair, is quite unproductive environment wise. But the rich talk of the sovereignty of the consumers and the right to their life-styles. The rich will not accept a progressive and meaningful cutback in their emission of carbon dioxide and other greenhouse gases because it will be at a cost to them and retard their progress. Yet they expect the poor people of the developing countries to stifle even their minute growth as if it will cost them nothing.¹⁰⁷

Statistics lend strength to the argument. "Of an estimated 2.477 trillion tons of waste generated worldwide in 1985, developed countries contributed [seventy-five percent], developing countries

105. *Population Impacts on Quality of Life*, in CHALLENGES AHEAD, *supra* note 25, at 20.

106. For example, Dr. Mahathir Mohamad, Prime Minister of Malaysia, has stated,

We know that the 25 percent of the world population who are rich consume 85 percent of its wealth and produce 90 percent of its waste. Mathematically speaking, if the rich reduce their wasteful consumption by 25 percent, world-wide pollution will be reduced by 22.5 percent. But if the poor 75 percent reduce consumption totally and disappear from this earth altogether the reduction in pollution will only be by 10 percent.

Statement by Dr. Mahathir Mohamad given at the Earth Summit (United Nations Conference on Environment and Development) in Rio de Janeiro, Brazil, June 1992 (on file with the *Tulane Environmental Law Journal*).

107. *Id.*

[twenty-five percent], the mirror image of their proportions of global population.”¹⁰⁸

Although changing wasteful lifestyles is a valid goal, many world leaders are beginning to agree that when it comes to addressing the environment and how to achieve sustainable development, curbing rampant population growth must also be of primary concern.

“[W]ithout attention to family planning, other forms of aid to the Third World are not only a waste but also a farce. It is perfectly clear that when the World Bank or the Inter-American Development Bank pumps millions of loan dollars into Third World countries, much goes down the drain if birth control is not a parallel target. Without birth control, developmental funds are merely diluted to clothe and feed more bodies. . . .”¹⁰⁹

In November 1989, the International Forum on Population in the Twenty-First Century met in Amsterdam. Delegates produced guidelines to “stabilize world population growth by the year 2000. . . . [and] called for increases in worldwide funding for family planning to at least \$9 billion annually by 2000.”¹¹⁰ Delegates from this conference and several other subsequent conferences and forums acknowledged the “inextricable link” between population resources and the environment.¹¹¹ Further, the delegates urged that population issues be given high priority at the 1992 Earth Summit¹¹² in Brazil (U.N. Conference on Environment and Development) (UNCED).¹¹³

108. See *Q&A Summary, in Questions and Answers*, *supra* note 19, at 1; see also *infra* notes 117-19 and accompanying text.

109. Hobart Rowen, *\$100 Million More for Family Planning*, WASH. POST, June 24, 1993, at A19.

110. *Audubon's Population Program*, AUDUBON ACTIVIST (Nat'l Audubon Soc'y, N.Y., N.Y.), Jan./Feb. 1993, at 5. For excerpts from the Forum, see *Key Resolutions and Statements on Population and Environment*, in CHALLENGES AHEAD, *supra* note 25, at 36.

111. See *The Population and Environmental Growth*, POPULATION REP. (Population Information Programs, Center for Communication Programs, Johns Hopkins University, Baltimore, Md.), May 1992, at 3 (noting that the Earth Summit resulted in treaties regarding global warming and biodiversity).

112. *Id.*

113. See *Key Resolutions and Statements on Population and Environment*, in CHALLENGES AHEAD, *supra* note 25, at 36-38 (listing the following international bodies which recognized the nexus between population and the environment: Asian Women Parliamentarians' Conference on Population and the Status of Women, Mar. 1990; General

Unfortunately, opponents of birth control kept population officially off the agenda at the Summit.¹¹⁴ Nonetheless, the Summit did result in a first-time formal consensus among the international community that “tied development policies to environmental protection.”¹¹⁵ However, according to Jeff Jordan of the Population Resource Center, “there was a back-lash at UNCED. The Third World sees [environmental degradation] related to consumption; and damage from the Third World by consumption is on a much lower scale than that of developed countries.”¹¹⁶ Jordan noted that many developing countries see the situation as racist: while the First World is to blame, they put the responsibility upon the Third World to shoulder the environmental clean-up.¹¹⁷

The developing countries may be right.¹¹⁸ But blame is not the issue. Efforts should focus on sound policies and practices

Assembly of Asian Forum of Parliamentarians on Population and Development: Third General Assembly on Population and Development, Oct. 1990; Ministerial Declaration of the Second World Climate Conference, Nov. 1990). The General Assembly of IUCN—The World Conservation Union, in its 18th Session, in December 1990, also recognized the “link” and argued that it receive high priority at the 1992 United Nations Conference on Environment and Development, as well as at the 1994 United Nations International Population Conference. *Id.*

114. *Audubon's Population Program*, *supra* note 110, at 5.

115. *See id.* *The Environment and Population Growth*, POPULATION REP. (Population Information Program, Center for Communication Programs, The Johns Hopkins University, Baltimore, Md.), May 1992, at 3. The *Rio Declaration* set forth principles of environmental protection and sustainable development, while *Agenda 21* detailed strategies for dealing with environmental problems.

116. Telephone Interview with Jeff Jordan, Program Officer, Population Resource Center (Mar. 8, 1993). The Population Resource Center is a nonadvocacy organization that compiles information and conducts research regarding population. Jordan's views do not necessarily reflect those of the Center. *Id.*

For examples of environmental impacts of developed countries as compared to the impacts of developing countries, see *Regional Overview*, in POPULATION REP., *supra* note 20, at 6-9 “[A] newborn U.S. child will have 30 times more impact on the earth's environment in his or her lifetime than a child born in India. The average U.S. resident generates 8.7 times the amount of heat-trapping gases as the average Chinese person and 14.3 times that of a resident of India.” (footnotes omitted). *Id.*

117. Telephone Interview with Jeff Jordan, Program Officer, Population Resource Center (Mar. 8, 1993).

118. As far as consumption is concerned, the developing countries are right:

There is little doubt that the industrialized world consumes the largest slice of the Earth's resources. With barely 25 percent of the world's population, developed countries consume 75 percent of all energy used, 79 percent of all commercial fuels, 85 percent of all wood products, and 72 percent of all steel production. In addition, developed countries

worldwide to prevent rapid population growth and the continued degradation of the earth. World leaders need to acknowledge that all nations must share in the responsibility of addressing measures to curb rapid population growth. According to Patricia Waak, Director of Population Programs at the National Audubon Society, “[w]hat UNCED taught us (something many of us already knew) is that we cannot ask other countries to do what we refuse to do ourselves. The industrialized countries were beginning to understand their roles as beyond that of paternalism to a new relationship of partnership.”¹¹⁹

The 1994 International Conference on Population and Development in Cairo, Egypt will be an opportunity for world leaders to formally acknowledge the nexus between overpopulation and overconsumption of natural resources. If leaders accept the status quo, experts predict dire consequences to follow. For example, by the year 2000, world population would increase by one billion; more than half of the developing countries would have to import food in order to feed their inhabitants; one-fourth of the world’s fresh water would no longer be safe to drink; and a majority of tropical forests would be severely damaged or destroyed.¹²⁰

V. UNITED STATES POPULATION POLICIES, PAST AND PRESENT

With the goal of decreasing the rate of population growth and increasing opportunities and motivation for family planning, the Foreign Assistance Act of 1961 (FAA) authorizes the President of the United States to create policies regarding population planning.¹²¹ In

generate nearly three quarters of all carbon dioxide which account for half of the greenhouse gases in the atmosphere.

The Population-Resource Equation, in CHALLENGES AHEAD, *supra* note 25, at 14.

119. Letter from Patricia Waak, Director of Population Programs at the National Audubon Society, to the author (Jan. 1994) (on file with *Tulane Environmental Law Journal*).

120. *How Population Growth Affects the Environment*, *supra* note 31, at 12 (including additional predictions and environmental consequences of the current population trends).

121. Foreign Assistance Act of 1961, 22 U.S.C. § 2151 (1988). Presently, the Clinton Administration and Congress have proposed new legislation that would replace the Foreign Assistance Act of 1961. The new act, the Peace, Prosperity, and Democracy Act of 1994 (HR3765), establishes six new priorities for U.S. foreign assistance. The priorities are: (1) Sustainable Development; (2) Building Democracy; (3) Promoting Peace; (4) Providing Humanitarian Assistance; (5) Promoting Growth Through Trade and Investment; and (6) Advancing Diplomacy. *Legislative Update, Population Assistance: Fresh Starts and*

1984, at the United Nations International Conference on Population in Mexico City, the United States delegation, then under the leadership of President Reagan, announced that population growth is a neutral phenomenon, “neither good nor bad . . .”¹²² and rejected the Global 2000 Report’s call for a “significant[] increas[e] [in] family planning . . . by doubling resources available and improving maternal and child health care.”¹²³ Accordingly, in what came to be known as the Mexico City Policy, Reagan declared that the United States would no longer fund nongovernmental organizations that provide abortion counseling, referral, or abortion-related services.¹²⁴ The Bush administration continued this policy.¹²⁵

In December 1984, the United States Agency for International Development (AID) ended a seventeen year commitment to one of the world’s largest family planning organizations, the International Planned Parenthood Federation (IPPF).¹²⁶ IPPF could not comply with the Mexico City Policy by virtue of its mission statement.¹²⁷ In

Precarious Victories, POPULATION PROGRAM (Nat’l Audubon Soc’y, Boulder, Colo.), Winter 1994, at 2 [hereinafter *Legislative Update*].

122. U.S. Government Plenary Statement at the International Conference on Population (James Buckley, Head of U.S. Delegation, Mexico City, Mexico), Aug. 8, 1984, at 2 [hereinafter *Plenary Statement*].

123. See Council on Environmental Quality, Department of State, *Global Future: Time To Act, Report to the President on Global Resources, Environment and Population*, 9 B.C. ENVTL. AFF. L. REV. 261, 269 (1981). The report also recommended expanded governmental assistance for research regarding more effective contraceptive methods, and the development of a U.S. national population policy. For a detailed discussion of the Global 2000 Report, see generally *id.*

124. Plenary Statement, *supra* note 122, at 4-5; For more background on the Mexico City Policy, see *Brief History of the “Mexico City” Policy*, FACT SHEET (Population Action Committee (formerly Population Crisis Committee), Washington, D.C.), Sept. 1991 [hereinafter *Brief History of “Mexico City” Policy*]; see also Anne Marie Gillette, *United States Restricts Funding to Foreign Nongovernmental Organizations Performing or Promoting Abortions*, Planned Parenthood Fed’n of America, Inc. v. Agency for Int’l Dev., 915 F.2d 59 (2d Cir. 1990), 15 SUFFOLK TRANSNAT’L L.J. 768 (discussing the Mexico City Policy and First Amendment issues).

125. *Questions and Answers on U.S. Policy On Population and International Planning*, FACT SHEET (Population Action Committee (formerly Population Crisis Committee) Washington, D.C.), at 2 [hereinafter *Questions and Answers on U.S. Policy*]. The Clinton Administration recently overturned the Mexico City Policy. See *infra* note 134.

126. *Brief History of the “Mexico City” Policy*, *supra* note 124.

127. See *Brief History of the “Mexico City” Policy*, *supra* note 124 (noting the AID decision to end funding of IPPF). IPPF’s mission is, *inter alia*, to promote and defend “the right of women and men, including young people, to decide freely the number and spacing of their children, and the right to the highest possible level of sexual and reproductive health.” *Strategic Plan: Vision 2000*, International Planned Parenthood Fed’n, 1992. IPPF also gives

1986, the United States withdrew support from the United Nations Population Fund (UNFPA).¹²⁸ Policies over the last twelve years of the Reagan-Bush era reflect the anti-abortion lobby's stronghold over the administration; during the same era, world population grew by a billion people.¹²⁹

There is no evidence that United States policies restricting funds for family planning have helped reduce abortion.¹³⁰ What United States inaction during the Reagan-Bush era has helped to do is “delay a global commitment to early population stabilization and derail improvements in a number of countries in reproductive rights for women.”¹³¹ From 1970 to 1980, average family size fell from 4.9 children to 3.8, a twenty-two percent decrease; while between 1980 and 1990, family size fell from 3.8 children to 3.5, only an eight percent decrease.¹³² A major factor explaining the stagnancy is the worldwide lag in contraceptive use between 1980 and 1990.¹³³

“special emphasis to material and child health, and notably to the elimination of unsafe abortion, through information, advocacy and access to family planning and safe abortion services.” *Id.*

128. Camp, *supra* note 47, at 127. For a detailed history of the withdrawal and AID's subsequent yearly denial of funds, see *Brief History of U.S. Funding for the United Nations Population Fund (UNFPA)*, FACT SHEET (Population Action International (formerly Population Crisis Committee) Washington, D.C.), Sept. 1991, at 1 [hereinafter *Brief History of U.S. Funding*]. The Fact Sheet notes that UNFPA in China supported an alleged coercive population program. *Id.* This led to the initial United States withdrawal of funds.

The U.S. first cut funds to UNFPA in fiscal year 1985, under the Kemp-Inouye-Helms amendment (also known incorrectly as the Kemp-Kasten amendment) to the FY 1985 supplemental appropriations bill. The amendment prohibits funding for any organization which the President determines ‘supports or participates in the management of a program of coercive abortion or involuntary sterilization.’

Id.

129. Camp, *supra* note 47, at 126-27. Both administrations vetoed all congressional attempts to overturn a series of major concessions on population aid policy. *Id.* See also *Questions and Answers on U.S. Policy*, *supra* note 125, at 2 (“U.S. policy changes pushed through by American anti-abortion groups in the 1980s have made it appear that the U.S. government is much more concerned about stopping abortion than about slowing rapid population growth around the world. The Bush Administration has continued to send the same mixed message.”).

130. *Questions and Answers on U.S. Policy*, *supra* note 125, at 2.

131. Camp, *supra* note 47, at 133.

132. *Id.*

133. See *id.* World contraceptive use during the 1970s “had grown by 53 percent (from 30 percent fertile age couples in 1970 to 46 percent in 1980) . . . [but] between 1980 and 1990 [contraceptive use] grew less than 20 percent (to 55 percent of couples) . . .” *Id.*

Cognizant of the ill-effects of the Mexico City Policy, and the growing dangers of population growth, President Clinton, in his first few days of office, signed an executive order overturning the Policy.¹³⁴ Most recently, the Clinton Administration also restored funding to International Planned Parenthood and to the United Nations Fund for Population Activities.¹³⁵ The United States has also contributed to the World Health Organization's human reproduction program, which is an international institution conducting abortion and contraceptive research.¹³⁶ President Clinton's actions mark a total reversal of the policy of the Reagan and Bush Administrations that were shaped primarily by anti-abortion sentiment.¹³⁷

Many population activists are presently encouraged by both the Clinton Administration's and congressional commitment to population assistance.¹³⁸ Funding for population and family planning in 1994 is expected to total \$514 million, an increase of about \$85 million from 1993.¹³⁹ This increase is remarkable since 1994 foreign

134. Memorandum, The Title XX "Gag Rule," 58 Fed. Reg. 7455 (1993), available in 1993 WL 24016 (Pres.). See also Carol Jouzaitis, *Clinton lifts gag rule, Ban on use of fetal tissue rescinded*, CHI. TRIB., Jan. 23, 1993, at N1 (Clinton said, "[t]he so-called Mexico City policy 'adopted 10 years ago by the Reagan administration has been an obstacle in stabilizing the world's population' [and international family planning].").

135. *Washington Population Update: News Analysis of U.S. and International Population Assistance* (Population Action International, Washington, D.C.), Oct. 1993, at 1-2 [hereinafter *Washington Population Update*]. UNFPA received \$14.5 million from the United States for fiscal year 1993 and IPPF received \$13.2 million. The IPPF funds will be provided within a five year framework totaling \$75 million. Due to the concerns over China's alleged coercive family planning policies, UNFPA is required to keep United States contributions in a separate account, document where they are spent, and avoid using the funds in China. *Id.* See also John M. Goshko, *Planned Parenthood Gets AID Grant: Award Ends Long Battle on Funding Abortion-Related Programs Overseas*, WASH. POST, Nov. 23, 1993, at A12; Steven A. Holmes, *Clinton Seeks to Restore Aid For Family Planning Abroad*, N.Y. TIMES, Apr. 1, 1993, at A1, A5. Colorado Senator Timothy C. Wirth stated, "There is an awareness in the Administration that if the United States does not aggressively re-enter the population battle to try to level off the world's population, and doesn't do it now, the chances of having the world's population stop between 9 billion and 10 billion people are zero. . . ." *Id.* at A1.

136. *Washington Population Update*, supra note 135, at 3. The United States contributed \$2.5 million to the program in 1993 and has only contributed to the program once before. *Id.*

137. *Id.*

138. See, e.g., *Washington Population Update*, supra note 135, at 5.

139. *Id.* at 3. The population assistance stems from a \$13 billion foreign aid appropriations bill signed into law by President Clinton on September 30, 1993. *Id.* It is anticipated that \$392 million will go to AID's population assistance account, an increase of \$42 million over the 1993 fiscal year. *Id.* UNFPA will receive \$40 million. Clinton had

aid appropriations were deeply cut in practically all areas of multilateral and bilateral assistance, including military grant aid.¹⁴⁰ As the report language accompanying the Senate version of the bill indicates, ““there is no higher development priority than an effective and adequately funded global population strategy.””¹⁴¹

Furthermore, the new AID administrator, J. Brian Atwood, appears to have a strong personal commitment to population assistance.¹⁴² AID’s new population and health strategy states that ““support for family planning will remain the core of USAID’s population programs,”” but that in order to be effective, the population and health policies must address women’s reproductive health needs more broadly.¹⁴³ This approach integrates population and health far more than in the past, and family planning plays a central role.¹⁴⁴ Countries that contribute most to global population and health problems and those where population and health conditions impede sustainable development will be AID’s new focus.¹⁴⁵

VI. SUCCESSFUL POPULATION REDUCTION PROGRAMS: JAMAICA, ZIMBABWE, AND NEPAL

Because there is a direct link between rapid population growth and exacerbated environmental problems, slowing the rate of growth is paramount to minimizing further environmental degradation. Family planning programs in Jamaica, Zimbabwe, and Nepal have enjoyed great degrees of success in lowering their rates of population growth.

originally asked for \$400 million for population assistance and \$50 million for UNFPA. *Id.* For Fiscal Year 1995, President Clinton recently requested \$585 million for population assistance, which includes \$60 million for UNFPA. *Legislative Update, supra* note 121, at 2.

140. *Washington Population Update, supra* note 135, at 3.

141. *Id.* at 4.

142. *Id.* at 5.

143. *Id.* at 7. The strategy is found in AID’s draft paper titled “Stabilizing World Population Growth and Protecting Human Health: U.S. AID’s Strategy.” *Id.* The prevention and control of sexually transmitted diseases (especially AIDS); improved prenatal and delivery services; infant and child health, especially immunization, diarrheal and respiratory disease control and nutrition; and education for girls and women will also be emphasized in the strategy. *Id.* The current draft does not include discussion of quality of care issues, adolescent fertility, and unsafe abortion. *Id.*

144. *Id.*

145. *Id.*

A. *Jamaica*

In the 1970s, AID started a grass-roots family planning campaign in Jamaica¹⁴⁶ in which health care workers and midwives traveled to rural parts of the country to educate women about the use of various birth control options such as birth control pills, intrauterine devices, tubal ligation, hormone injections,¹⁴⁷ and condoms. Most recently, physicians have begun to use the contraceptive Norplant.¹⁴⁸

The health care workers and midwives face various religious beliefs found predominantly in the rural areas. For example, the county's Rastafarian religious sect used to believe that birth control was a plot to kill off blacks.¹⁴⁹ Other inhabitants of the rural areas believe that "'you're supposed to have as many children as the Lord wants you to have.'"¹⁵⁰ Nonetheless, estimates by the Jamaican government reveal that today, fifty-five percent of sexually active Jamaicans use contraceptives.¹⁵¹ Over the past decade and a half, Jamaica's fertility rate has dropped from 4.5 live births per woman to 2.9.¹⁵² This drastic decrease had made Jamaica a model for developing countries combating overpopulation.¹⁵³

Over the next five years, AID will continue to fund family planning in Jamaica, but will then phase out assistance.¹⁵⁴

146. John Otis, *Jamaica's birth control effort setting example for developing nations*, MIAMI HERALD, Mar. 22, 1993, at 12A.

147. *Id.* Some Jamaican women receive injections of Depo-Provera which acts as contraceptive for ninety days. *Id.* Despite contentions that the hormone is linked to liver, breast, or cervical cancer, the U.S. Food And Drug Administration dismissed the claims and approved it in 1992. *Id.*

148. *Id.* Norplant comes in the form of six match stick-size capsules, and contains the hormone Levonorgestol. *Id.* The hormone is gradually released into the woman's body upon surgical placement into the arm. *Id.* Jamaica's director of the Norplant program noted, "The operation takes [ten] minutes and it lasts for five years." *Id.* The capsules may be surgically removed if side-effects develop, but the director of the Women's Bureau fears that poor women in rural areas, will not be able to return to the hospital. *Id.* The executive director of the Family Planning Board, nonetheless feels that long-term contraceptives are the most effective. *Id.*

149. *Id.*

150. Otis, *supra* note 146, at 12A (quoting Elaine Rainford of Women's Bureau).

151. *Id.*

152. *Id.*

153. *Id.* This reduced birth rate is one factor that contributes to Jamaican women's standard of living. *Id.* According to a 1991 United Nations survey, women in this country enjoy a standard of living that exceeds that of women living in nearly every other developing country. *Id.*

154. *Id.*

Eventually, Jamaicans will have to pay for the contraceptives they currently are receiving for free.¹⁵⁵

B. Zimbabwe

The National Family Planning Association (NFPA), founded in 1967, began as a group of volunteers who were concerned with forming policies to curb population growth.¹⁵⁶ Funded mainly by the government, the NFPA, by 1981, provided field service through over 620 outlets, including twenty-four clinics of its own.¹⁵⁷ Services included education, “gynecological screenings, and distribution of contraceptives (including free condoms).”¹⁵⁸

In 1983, the association became a quasi-governmental agency, known as the Zimbabwe National Family Planning Council.¹⁵⁹ The council utilizes existing women’s groups, local businesses, community-based teachers and nurses, and literacy programs to reach the Zimbabwean people.¹⁶⁰ By 1984, the fertility rate had dropped to 6.5 children per woman, down from 8.0 in the late 1960s.¹⁶¹ The rate has continued to fall and today is at 5.5 children per woman.¹⁶²

Much of the Council’s success in family planning can be attributed to the involvement of men, who once believed that family prospects diminish with the use of birth control.¹⁶³ A 1988 survey revealed that “[eighty percent] of Zimbabwean men interviewed had used at least one contraceptive method . . . and rated an average ideal family size as 4.6 children”¹⁶⁴ However, the efforts of the

155. Otis, *supra* note 146, at 12A.

156. *Zimbabwe’s Model Plan Nearly Halves Birthrate*, AUDUBON ACTIVIST (Nat’l Audubon Soc’y, N.Y., N.Y.), Jan./Feb. 1993, at 10.

157. *Id.*

158. *Id.*

159. *Id.* The Zimbabwe Ministry of Health is the principle supervisor of the Council. *Id.*

160. *Id.* See also *Towards a Sustainable Future*, in CHALLENGES AHEAD, *supra* note 25, at 7 (“Where governments have improved the status of women, as in Zimbabwe, birth rates have come down and population growth slowed.”).

161. *Zimbabwe’s Model Plan*, *supra* note 156, at 10.

162. *Id.*

163. *Id.*

164. *Id.* This goal is steps away from the 4.0 goal set by family planners for the year 2000. *Id.* Family planners hope to further reduce the figure to 2.0 by 2015. *Id.* If these goals are reached, the Zimbabwe population will stabilize by 2075 at 23 million people. Zimbabwe’s present population is 10 million. *Id.*

Council must continue. The most recent comprehensive study, done in 1988, revealed that over sixty percent of the women in the country have little or no significant family planning education.¹⁶⁵ Additionally, only forty-three percent of the seventy-nine percent of the women who had once practiced birth control, were currently using contraceptives.¹⁶⁶

C. Nepal

In 1973,¹⁶⁷ the Family Planning Association of Nepal, along with World Neighbors, began an integrated development project known as the Buddha Bahunepati Family Welfare Project (BBP).¹⁶⁸ BBP is located in Chautara, a village in Eastern Nepal.¹⁶⁹ Hillside agriculture and subsistence living have led to massive deforestation, soil erosion and landslides in this area.¹⁷⁰ "Large family sizes are desired for cultivation, animal tending, and fuelwood and fodder collection; but the increasing population, decreasing productivity of the land, and small size of land holdings have led to deteriorating living conditions among rural people."¹⁷¹

BBP recognized that successful family planning could not happen "without first raising the income level of the villagers"¹⁷² Efforts have included the provision of clean water, primary health care, sanitation (pit latrines), erosion control, and planting of fuel woods and fodder trees.¹⁷³ "The main approach . . . is community

165. *Id.*

166. *Id.*

167. *Questions and Answers*, *supra* note 19, at 26.

168. *Women, Population and Environment*, in CHALLENGES AHEAD, *supra* note 25, at 23.

169. *Id.* Nepal is one of the poorest countries in the world. *Id.* Per capita income averages less than \$350 a year. *Id.* BBP is one of the largest development projects in the country, including 20,000 households (about 130,000 people) who live in the hilly region east of Khatmandu. *Id.*

170. *Abstracts and Excerpts from Recent Scientific Studies, by Topic*, in *Questions and Answers*, *supra* note 19, at 26 (citing KESHARI KANSAKAR, CASE STUDIES IN POPULATION AND NATURAL RESOURCES: NEPAL (The World Conservation Union, 1989)).

171. *Id.*

172. *Women, Population and Environment*, in CHALLENGES AHEAD, *supra* note 25, at 23. Pradesh Bahadur Kayastha, program officer at the Family Welfare Center in Chautara points out: "Most people there live on the edge of survival." *Id.*

173. *Id.* The Family Welfare Center also distributes seeds for gardens and fruit trees as another way for villagers to earn income. *Id.* See also *Abstracts and Excerpts from Recent*

participation, with decentralized community committees, mostly community labor and funds, and efforts for projects to become self-sustaining.”¹⁷⁴

Important to BBP’s success is the emphasis placed on improving women’s lives.¹⁷⁵ Women today attend literacy classes, tend vegetable and fruit gardens to earn extra income, participate in soil erosion control programs, as well as other conservation projects, and volunteer at family planning and maternal and child health services.¹⁷⁶ As of 1989, thirty-six percent of the women of childbearing age in the Bahunepati region accepted family planning, double the national average, and the mortality rate had decreased.¹⁷⁷

VII. RECOMMENDED ACTIONS

A. *Expand Family Planning*

The most effective action to address population issues “is . . . [the] expan[sion] and improve[ment of] family planning programs to reach all couples who want to limit or space births.”¹⁷⁸ A majority of couples in many developing countries want smaller families: two to three children.¹⁷⁹ Effective family planning would stabilize world

Scientific Studies, by Topic, in Questions and Answers, supra note 19, at 26 (citing Kansaker who noted the success of BBP’s fodder tree plantation program).

174. *Id.* at 26.

175. *Women, Population and the Environment, in CHALLENGES AHEAD, supra* note 25, at 23.

176. *Id.*

177. *Abstracts and Excerpts from Recent Scientific Studies, by Topic, in Questions and Answers, supra* note 19, at 26 (citing the Kansaker study).

178. *Policy Implications, POPULATION REP.* (Population Information Program, Center for Communication Programs, The Johns Hopkins University, Baltimore, Md.), May 1992, at 25; see also William K. Stevens, *3d World Gains in Birth Control: Development Isn’t the Only Answer*, N.Y. TIMES, Jan. 2, 1994, at 1 (discussing the success of Third World countries in reducing population growth through the use of modern contraceptive methods); Robey, et al., *The Fertility Decline in Developing Countries*, SCIENTIFIC AMERICAN, Dec. 1993, at 60, 62 (suggesting that family planning, new contraception technology and mass media education are the most powerful influence in reducing fertility rates).

179. Camp, *supra* note 47, at 135 (indicating that recent surveys identified this trend); see also Mirsky, *supra* note 100, at 11 (Dr. Joseph Speidel, president of the Population Crisis Committee, states, “We know that couples want to control their fertility, so it’s not a matter of bludgeoning them into accepting birth control.”); *Q and A Summary, in Questions and Answers, supra* note 19, at 6 (“The results from recent Demographic and Health Survey indicated that from half to three quarters of married women of childbearing age in most Asian countries and Latin American countries either do not want any more children or want

population growth at 9 billion by the middle of the next century.¹⁸⁰ Yet, it is estimated that 300 million couples currently have an unmet need for birth control.¹⁸¹ With an estimated cost of only \$2 per capita per year for “good family planning services,” and a receptive population, it seems as though the population problem is surmountable.¹⁸²

1. Problems in Current Family Planning Services

Access and quality are two major problems in current family planning programs.¹⁸³ First, there is a lack of access to information and affordable services.¹⁸⁴ For example, in several African countries, couples must spend a third or more of their per capita income to buy a year’s supply of birth control pills or condoms.¹⁸⁵ Additionally, services are often only available in large cities, ignoring rural populations.¹⁸⁶

Quality of family planning services is also problematic.¹⁸⁷ “[C]ontact with government programs is [often] a dehumanizing, time-consuming activity, requiring a great deal of motivation.”¹⁸⁸ Often lacking are personal counseling services, as well as services that address broader sexual health care needs, such as screenings for sexually transmitted diseases.¹⁸⁹ Choices in contraceptive methods

to delay childbearing.”); *Issues and Answers on Population and the Environment, in WHY POPULATION MATTERS*, *supra* note 2, at 11 (“In many poor countries, surveys show that 75 per cent or more of women would use modern contraceptions if affordable supplies and services were easily available.”); Stevens, *supra* note 178 at 4 (“One reason for the spread of contraception in the third world is that demand is rising.”) (quoting Bryant Robey of Johns Hopkins School of Hygiene and Public Health); Robey, *supra* note 178, at 60 (suggesting that a woman’s desire to have smaller families is the growing cause of declining birthrates in Third World countries).

180. *See* Camp, *supra* note 47, at 138.

181. *Id.* at 135.

182. Mirsky, *supra* note 100, at 11 (quoting Dr. Joseph Speidel, president of the Population Crisis Committee).

183. *Id.*

184. *Id.*

185. *Id.*

186. *See* Camp, *supra* note 47, at 135-36.

187. *Id.* at 136.

188. *Id.* at 137.

189. *Id.* at 136-37.

are also often limited.¹⁹⁰ Where there are only a few methods available, and especially when those methods are ineffective, there is little incentive to use birth control.¹⁹¹ It is unlikely that widespread voluntary family planning will occur, unless effective counseling and birth control are provided.¹⁹²

It is important to note that quality does not necessarily go hand in hand with expense.¹⁹³ Programs utilizing local health care workers, often women, in community-based centers, incur less cost than programs using physicians working out of hospitals.¹⁹⁴ Safety and satisfaction is often better in these community-based programs because the workers have more contact with clients.¹⁹⁵

2. Effective Family Planning Policies

Some of the most cost effective and time effective population policies “are those that ensure a wider availability of birth control methods, along with the [education,] information and counseling needed to use them safely and correctly.”¹⁹⁶ Sharon L. Camp, former senior vice-president of Population Action International, cites the following as “basic tenets” to successful family planning efforts, “even in relatively poor communities with low levels of education.”¹⁹⁷

- Make family planning and other preventive health services easily available to rural as well as urban populations by moving them close to the potential clients. Offer them in a manner and setting that is culturally sensitive.
- Allow people to choose freely from the broadest possible range of safe, effective and reversible contraceptives, both temporary and long-acting, as

190. *Id.* Ninety percent of the couples in China rely on a crude intrauterine device or sterilization. *Id.*

191. Camp, *supra* note 47, at 136.

192. *See id.* at 136-37. Because of few temporary methods available to plan births in India, in seventy percent of the couples practicing family “planning,” the women are sterilized. *Id.* at 136.

193. *See id.* at 137.

194. *Id.*

195. *Id.*

196. Camp, *supra* note 47, at 134.

197. *Id.* at 137.

well as contraceptive sterilization. Back up those methods with safe abortion.

- Allow people to choose freely among a variety of qualified family planning service-providers including private, commercial, and community programs. Enforce standards of care that protect clients' health and freedom of choice without unnecessary barriers to contraceptive availability.
- Link family planning with other health and community development initiatives, especially programs that help ensure that children survive and that help women make life choices about more than just childbearing.¹⁹⁸

These tenets, used successfully in varying degrees in Jamaica, Zimbabwe, and Nepal, demonstrate their effectiveness.¹⁹⁹

B. *Empowerment of Women*

Another key to the achievement of sustainable development is a political atmosphere supportive of women's rights²⁰⁰ so that women have a meaningful say in controlling their own fertility.²⁰¹ Today, the societal role of the majority of women in developing countries is

198. *Id.*

199. See *supra* notes 146-177 and accompanying text. Other countries that used family planning include Thailand and Colombia. *Q&A Summary, in Questions and Answers, supra* note 19, at 7. In Thailand, the birthrate declined from 6.2 to 2.2 children in just seventeen years. *Id.* In Columbia, the average number of children per woman fell from seven in 1965, to 2.9 in 1992. *Id.*

200. For a discussion of women and sustainable development, see generally Robert F. Houseman, *The Muted Voice: The Role of Women in Sustainable Development*, 4 GEO. INT'L ENVTL. L. REV. 361, 369-88 (1992) (recommending *inter alia*, that: sustainable development measures be run by women; multilateral lending include women; nondiscrimination in private investment; and the provision of meaningful family planning assistance); see also ENGLEMAN & LEROY, *supra* note 66, at 39 (briefly discussing the link between female empowerment and the environment).

201. Camp, *supra* note 47, at 134-35. Noted feminist author Perdita Huston, in her 1979 book *Third World Women Speak Out*, quotes a Tunisian woman:

Before, women were unhappy. They were always in poor health, nursing the children, having children, always weak. Now women are flourishing. They can take advantage of all that is offered. They can have family planning. They are clean and healthy and have freedom. . . . That's all we women talk about: family planning and women's freedom. . . . We are equal. The President says so—it's all thanks to him.

Id. at 135.

dismal.²⁰² According to a 1988 study, over sixty percent of women are living in conditions “that threaten their health, deprive them of choices about childbearing, limit their educational opportunities, restrict their participation in the economy, and deny them civil and political rights equal to those of men.”²⁰³ Raising women’s social and economic status leads to fewer newborns and demonstrates the interconnection between the role of women, population growth, environmental degradation, and sustainable development.²⁰⁴ As population growth declines, pressures on the environment also decrease, allowing the country to move toward sustainable development.²⁰⁵

C. *United States Leadership*

United States leadership must be restored.²⁰⁶ President Clinton promptly overturned the Mexico City Policy and has reestablished funding to the UNFPA and IPPF, but these actions are only a start.²⁰⁷ The 1993 contribution to UNFPA was much lower than what was originally proposed to Congress,²⁰⁸ while the 1993 contribution to IPPF was substantially less than its last contribution in 1984.²⁰⁹ While 1994 population assistance is substantially higher than the amount in 1993, it is again still lower than what was originally proposed to Congress.²¹⁰ The current administration must continue to further expand its funding to family planning and development programs to stabilize world population. Universal, safe and effective birth control, and the accompanying know-how is

202. Houseman, *supra* note 200, at 362 (citing a study of ninety-nine countries by the Population Crisis Committee).

203. *Id.*

204. *See id.* at 367; *see also* Robey, *supra* note 178, at 62 (revealing statistics that demonstrate the relation between women’s education and fertility rates in Thailand, Bolivia, and Uganda: as education levels increase, fertility rates decrease).

205. Houseman, *supra* note 200, at 363.

206. Camp, *supra* note 47, at 134 (“Clinton must return the United States to the leadership ranks of world population efforts.”).

207. *See supra* notes 134-35 and accompanying text.

208. *Washington Population Update*, *supra* note 135, at 2. The Administration initially considered contributing \$34 million to UNFPA but later proposed only \$20 million to Congress. *Id.* The 1993 contribution of \$14.5 million is substantially lower than what the \$36 million it last contributed in 1985. *Id.*

209. *Id.* In 1984, the United States contributed \$17 million to IPPF, while only contributing \$13.2 million in 1993. *Id.*

210. *Id.* at 3.

paramount.²¹¹ Foreign aid focused on stemming the population tide must be a formulated and foremost U.S. policy objective.²¹²

Although it does not appear that religious based anti-abortion sentiment is driving current U.S. foreign aid policy, the Clinton administration must be mindful of religious forces that can threaten family planning implementation. A recent Vatican encyclical²¹³ released in October of 1993, reaffirmed the traditional Catholic teaching that prohibits, *inter alia*, artificial contraception, calling this practice "intrinsically evil."²¹⁴ The Vatican enjoyed a strong voice at the Earth Summit and may be a significant influence at the International Conference on Population and Development in Cairo.²¹⁵

At the Cairo Conference, the United States should promote a global consensus to stabilize population growth and address the rights and needs of women.²¹⁶ The population stabilization plan must be based on individual reproductive choice, including access to safe abortion.²¹⁷ Timothy Wirth, a Clinton appointee to U.S. State Department Counselor on Global Affairs, and noted for his pro-family planning record, has stated that the United States position at the Conference will follow these lines.²¹⁸

211. See *Q&A Summary, in Questions and Answers, supra* note 19, at 6 ("[g]ood family planning means . . . developing community-based counseling, outreach, and services concerned with the individual family planning user").

212. See Camp, *supra* note 47, at 142 (noting that eighty-five to ninety percent of Americans "are concerned about world population problems and support family planning as a way to reduce birthrates."); Peter A. Berle, *Clinton Can Remake Population Policy*, AUDUBON ACTIVIST (Nat'l Audubon Soc'y, N.Y., N.Y.), Jan./Feb. 1993, at 2 (Berle, president of the National Audubon Society, suggests that President Clinton should "convene a commission on population and natural resources to formulate a comprehensive national policy and upgrade U.S. international population assistance.").

213. *Washington Population Update, supra* note 135, at 11. An encyclical, a pastoral letter from the Pope, is regarded as the church's authoritative teaching. *Id.*

214. *Id.* Pope John Paul II released the encyclical, *Veritatis Splendor*, which also prohibited abortion, premarital sex, divorce, homosexuality, and artificial insemination. *Id.*

215. See *Audubon's Population Program, supra* note 110, at 5 (citing the influence of groups opposing birth control).

216. See Sharon L. Camp, *A Critical Decade: U.S. Must Take the Lead in Slowing Global Birth Rate*, SAN FRAN. CHRON., Mar. 22, 1993, at A6.

217. *Id.*

218. Hobart Rowen, *\$100 Million More for Family Planning*, WASH. POST, June 24, 1993, at A19; Timothy Wirth, *World's Population Concerns*, SAN FRAN. CHRON., May 25, 1993, at A19.

VIII. CONCLUSION

“*Homo sapiens*, long thought to be the most intelligent life form on Earth, is doing what few wild animals ever do: fouling its own nest.”²¹⁹ Rapidly growing human populations, increased consumption, and shrinking resources require immediate action.²²⁰ Solutions to global population-environmental problems are not possible unless the array of development issues are addressed together. Efforts to promote female education, maternal and child health, and quality family planning services²²¹ must be coordinated with innovative conservation measures.²²² Development strategies should aim to improve environmental conditions locally, nationally, and internationally.²²³

Of the many factors known to contribute to environmental degradation, population growth “is the one we best know how to address today It would be foolish and risky for [hu]mankind to count on expensive, untested ‘future’ technology . . . when we can

219. *Why Do Environmentalists Need to Worry About Population?*, in WHY POPULATION MATTERS, *supra* note 2, at 1.

220. See *Policy Considerations*, in CHALLENGES AHEAD, *supra* note 25, at 25 (“[T]ime is at a premium.”); see also *The Environment and Population Growth: Decade For Action*, POPULATION REP. (Population Information Program, Center for Communication Programs, The Johns Hopkins University, Baltimore, Md.), May 1992, at 2 (“The next decade is crucial. Action must be taken now on both environmental and population problems.”).

221. See generally *Women, Population and Environment*, in CHALLENGES AHEAD, *supra* note 25, at 22, 27-28 (discussing the importance of improving women’s social status through female education, the provision of family planning services, increasing maternal and child health care); see also *Q&A Summary*, in *Questions and Answers*, *supra* note 19, at 6 (noting the importance of female education); *Policy Implications*, *supra* note 178, at 25 (citing greater involvement of women in policy matters as a key to population control); Guadalupe de la Vega, *Break the Cycle of Exploitation*, AUDUBON ACTIVIST (Nat’l Audubon Soc’y, N.Y., N.Y.), Jan./Feb. 1993, at 2. Guadalupe de la Vega is the founder and director of FEMAP, a family planning and community development organization in Mexico. *Id.* In this article, she points out that “humans have abused both Earth and Woman, the begetters of life . . . [and] have failed to respect the natural cycles of ecology and natality [i]n the name of progress. . . .” *Id.* De la Vega then ardently suggests that humankind “must now replace the emphasis on mastery and exploitation with an attitude of respect and preservation.” *Id.*

222. See, e.g., *Policy Implications*, *supra* note 178, at 25 (discussing important conservation measures).

223. In 1987, the World Commission on Environment and Development warned that “population is growing at rates that cannot be sustained by available environmental resources, at rates outstripping any reasonable expectations of improvements in housing, health care, food security, or energy supplies. . . . Governments that need to should develop long-term, multi-faceted population policies and campaigns to pursue broad demographic goals.” CHALLENGES AHEAD, *supra* note 25, at 36; see also *id.* at 25, 29-30 (discussing specific actions to take locally, nationally, and internationally).

prudently and inexpensively address the problem of human numbers with simple tools that are already available, well tested, and increasingly in demand around the world.”²²⁴

224. *Why Do Environmentalists Need To Worry About Population?*, in *WHY POPULATION MATTERS*, *supra* note 2, at 1.