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The Big Push: Emigration in the Age of Environmental Catastrophe

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There are approximately 1.1 million immigrants arriving in the United States each year, which accounts for about 1.1 percent of worldwide immigration.¹ "According to a 1992 World Bank estimate, there are 100 million international migrants of all kinds, which represents one out of 50 people on the globe."² Of that total, approximately two-thirds reside in less developed countries.

Environmental destruction on a large scale has been blamed for international migration between Third World countries as well as for the more publicized exodus of desperate peoples from the Third to the First World. Yet, ascribing a single cause to such vast migratory patterns may be entirely quixotic. Other causes, such as increasing disparity in economic opportunity among countries of the Third World; continuing political instability among and within Third World countries; and the economic machinations of such entities as the World Bank and the International Monetary Fund (IMF) have certainly contributed to burgeoning migration patterns.³ Moreover, the crush of increasing populations certainly impels emigration.

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1. Frank Sharry, *Immigration and Population in the United States: Collision or Consensus?*, in BEYOND THE NUMBERS: A READER ON POPULATION, CONSUMPTION, AND THE ENVIRONMENT 381, 384 (Laurie Ann Mazur ed., 1994).

2. *Id.*

3. William T.S. Gould & Allan M. Findlay, *International Migration Within the Third World: Recent Trends and Current Issues*, in POPULATION MIGRATION AND THE CHANGING WORLD ORDER, 197, 198 (William T.S. Gould & Allan M. Findlay eds., 1994). See also LESTER R. BROWN & HAL KANE, FULL HOUSE: REASSESSING THE EARTH'S CARRYING CAPACITY 28 (1994): "The sequence of events that leads to environmental degradation is all too familiar to environmentalists. It begins when the firewood demands of a growing population exceed the sustainable yield of local forests, leading to deforestation. As firewood becomes scarce, cow dung and crop residues are burned for fuel, depriving the land of nutrients and organic matter. Livestock numbers expand more or less apace with the human population, eventually exceeding grazing capacity. The combination of deforestation and overgrazing increases rainfall runoff and soil erosion, simultaneously reducing aquifer recharge and soil fertility. No longer able to feed themselves, people become environmental refugees, heading for the nearest city or food relief center." See also Anne Whyte, *The Human Context*, in POPULATION, CONSUMPTION, AND THE ENVIRONMENT: RELIGIOUS AND SECULAR RESPONSES 48, 50 (Harold Coward ed., 1995) (stating that population and environmental issues are so interrelated that "[b]etter social policies are . . . better environmental policies.").

In addition, environmental destruction can be a root cause of economic disparity and political instability. Positive feedback loops exist whereby a country nearing economic collapse cannot afford soil conservation, sound silvacultural techniques, and wastewater treatment, which in turn exacerbates political instability and economic decline.

All sound environmental policies can lead to a reduction in transborder migration.⁴ However, this Note will examine whether the international legal community has begun to address the issues surrounding an impending increase in environmental refugees.

Many well-placed commentators discount the severity of the crush of population pressures in the near term. For these lotus-eaters, technology will supply food to the Third World indefinitely.⁵ But technology in food production may be approaching limits beyond which progress will be difficult and will be marked by incremental, not paradigmatic, improvements. Experimental rice farms, for example, have not improved yields beyond their 1984 levels, and rice is not unique in this respect.⁶

Environmental issues come in several flavors. They can be broken down by category depending on the appropriate mode of analysis. This Note will only explore large-scale environmental issues or problems. The reason is that, while small-scale environmental disasters may cause more migration, it is the large-scale disasters that will likely cause massive migration across international borders. Yet even some localized disasters have created large-scale movements of people across borders.⁷ The clearest case yet is, of course, Chernobyl.

Global warming is expected to have several environmental effects over the next few decades. These include a rise in the sea level, an increase in

4. This also implies that all international devices employed to curb population increases can also be seen as aiding in limiting the impacts and scope of environmental refugees.

5. See also JULIAN L. SIMON, *POPULATION MATTERS* (1990). See generally JULIAN L. SIMON, *THE ULTIMATE RESOURCE* (1981).

6. BROWN & KANE, *supra* note 3, at 23-25. Brown and Kane list six new constraints in this "world of limits." The constraints include a shortage of fresh water for irrigation; the limits in the efficacy of fertilizers; population pressures leading to agricultural land losses to urban sprawl; and social disintegration, which undermines many national governmental efforts to ameliorate the stagnation in agricultural production. *Id.*

7. See, e.g., Mahendra K. Premi, *Projected Population Patterns, North-South Relations, and the Environment*, in *POPULATION, CONSUMPTION, AND THE ENVIRONMENT*, *supra* note 3, at 223-24. The work organizes environmental harms into three categories based on scale. First are the large scale issues: global warming and ozone depletion are the most prominent. Second, there are the "meso level ecological/environmental issues" such as pollution of rivers, deforestation, and the like. Third, Premi lists "micro level issues" such as safe drinking water. *Id.*

desertification, and a proliferation and intensification of weather extremes. The world's oceans are predicted to rise about twenty centimeters (nearly eight inches) by the year 2030, and about fifty centimeters (nearly twenty inches) by 2100.⁸ This predicted rise is said to be due to the melting of polar ice and the expansion of the warmer water.⁹

Because the predictions regarding the extent of mean sea level rise vary, it is impossible to predict with any certainty how this rise will affect human populations. Yet, since this effect could be very large, and may happen quite soon, it is important to consider. The Intergovernmental Panel on Climate Change (IPCC) included the Coastal Zone Management Subgroup (CZMS), which was charged with considering various strategies that coastal areas could employ to combat higher waters.¹⁰ This Subgroup attempted to identify coastal areas, populations, and resources that would be put at risk by a rise in sea levels.¹¹ The populations living in areas of high risk are predicted to increase from 210 million to 260 million due to this increase in the sea level, and to 400 million by the year 2020 due to population growth.¹² The area of highest risk--due to many contributing factors including geography, population, and paucity of infrastructure--is the Asian Indian Ocean coastal region. The impacts of a rising sea level are easy to predict, but difficult to resolve. Port cities will not function properly, and urban planning will be further challenged by increasing migration.¹³

8. Eric C.F. Bird, *Present and Future Sea Level: The Effects of Predicted Global Changes, in CLIMATE CHANGE: IMPACT ON COASTAL HABITATION* 29, 33 (Doeke Eisma ed., 1995) [hereinafter CLIMATE CHANGE] (referring to reports presented to the Intergovernmental Panel on Climatic Change (IPCC)). Most scientists have endorsed the views of the Climate Convention and the IPCC. See Doeke Eisma, *Introduction to CLIMATE CHANGE, supra*, Sir John Houghton and Bert Bolin, *Preface to CLIMATE CHANGE 1992: THE SUPPLEMENTARY REPORT TO THE IPCC SCIENTIFIC ASSESSMENT* at xi,xii (John T. Houghton et al. eds., 1992). Of course the estimates vary, and some project a more moderate rise. See T.M.L. Wigley & S.C.B. Raper, *Implications for Climate and Sea Level of Revised IPCC Emissions Scenarios*, 357 NATURE 293-300 (1992) (predicting a rise of 48 cm by the year 2100). But see Yoram J. Kaufman & Ming-Dah Chou, *Model Simulations of the Competing Climatic Effects of SO₂ and CO₂*, JOURNAL OF CLIMATE 6, 1241-52 (1993) (predicting that factors which cause global cooling will greatly counterbalance CO₂'s warming effects). See also J.T. Kiehl & B. P. Briegleb, *The Relative Roles of Sulfate Aerosols and Greenhouse Gases in Climate Forcing*, 260 SCIENCE 311-14 (arguing that sulfate aerosol effects could cancel out "virtually all" greenhouse warming effects in the next century).

9. Bird, *supra* note 8, at 33.

10. Frank M.J. Hoozemans & Cornelis H. Hulsbergen, *Sea Level Rise: A Worldwide Assessment of Risks and Protection Costs, in CLIMATE CHANGE, supra* note 8, at 337-38.

11. *Id.* at 138.

12. *Id.* at 155.

13. Tjeerd Deelstra, *Impact of Climatic Change on Coastal Cities, in CLIMATE CHANGE, supra* note 8, at 186-87.

The risk of desertification has increased the migratory pressures on people on almost all populated continents.¹⁴ While global warming has certainly increased desertification by altering rainfall patterns and increasing the average temperature, the primary cause is poor farming techniques.¹⁵ Each year approximately 70,000 square kilometers of farmland is abandoned due to erosion and overgrazing.¹⁶ More alarmingly, desertification “threatens nearly one-third of the Earth’s land surface.”¹⁷ The impacts of desertification are exacerbated by the fact that, mainly due to population pressures, this marginal land is being subdivided to the point where each landholding averages slightly more than one hectare.¹⁸

One problem with melding an international environmental policy that is capable of confronting the harsh realities of the twenty-first century with a population program capable of seriously addressing the runaway population growth of today is that historically there has been no integration of these two interrelated areas of concern.¹⁹ This coordination will require both complete reorganization and streamlining of the international institutions concerned with population and the environment, and more “bottom up” control by local and regional actors.²⁰ Otherwise, international efforts will forever be faced with dealing only with effects, and never with the root causes of migration.

One recent instance of large-scale migration, caused at least in part by environmental stress, is the 1984 migration of about a half million Ethiopians: Senegal is another example of a country experiencing large emigration due to largely environmental reasons. While Senegal has quite abundant agricultural land, it has been ravaged by “severe wind erosion, loss of nutrients, salinization because of overirrigation [sic] and soil compaction caused by the intensification of agriculture.”²¹ Some have said that the migration within China from the interior to the coastal cities is due largely to environmental destruction of the land.²²

14. UNITED NATIONS POPULATION FUND, POPULATION AND THE ENVIRONMENT: THE CHALLENGES AHEAD 15 (1991).

15. *Id.* at 15-16.

16. *Id.* at 15.

17. *Id.*

18. *Id.* at 16.

19. *Id.* at 7.

20. *Id.*

21. Thomas F. Homer-Dixon et al., *Environmental Change and Violent Conflict*, in BEYOND THE NUMBERS, *supra* note 1, at 394-95.

22. *Id.* at 398 (referring to Vaclav Smil’s study of Chinese migration).

The international response to this threat of vast transborder migration has been muted. For the most part, the effects on the movements of human populations caused by global warming have yet to be assessed by the international community. There is little mention of migration in the IPCC assessment of the impacts of global warming.²³ Desertification is recognized as a source of immense dislocations in the southern Magreb in the IPCC Impacts report.²⁴ Yet the IPCC, in its suggested legal framework for a response to climate change, does not list human dislocations as a "key issue" that such a framework must address.²⁵

Perhaps the closest that the IPCC has come to addressing migration during its exhaustive study of the likely impacts of global climate change is when they discuss the ramifications of sea level rise associated with global warming. Working Group III recommends establishing a National Coastal Planning Unit capable of developing a comprehensive plan, including identifying coastal areas that are particularly at risk; preventing further harm to sensitive coastline that will exacerbate the harm as sea levels rise; and prepare an emergency response program, including evacuation and defensive barrier planning.²⁶ Internationally, the IPCC recommends that institutions focus their attention on this problem, and provide technical assistance including technology transfers and support for population control measures in threatened coastal regions.²⁷ Furthermore, the IPCC recommends that more research into sea level rise be funded at the international level, and that new data be funneled through an efficient network to at-risk countries.²⁸ Finally, the IPCC recommended that their constituent organizations, the World Meteorological Organization and the United Nations Environment Programme, coordinate this effort, which would cost, at the outset, ten million dollars for the first five years.²⁹

23. WORKING GROUP II, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE: THE IPCC IMPACTS ASSESSMENT (W.J. McG. Tegart et al. eds., 1990). The IPCC is a joint panel comprised of members of the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP). The Working Group II report does assess many other socio-economic effects of climate change.

24. *Id.* at 5-3.

25. WORKING GROUP III, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE: THE IPCC RESPONSE STRATEGIES 263-268 (1990). However, the suggested research includes "environmental, social, and economic effects that could result from modifications of climate." *Id.* at 266.

26. *Id.* at xlv.

27. *Id.*

28. *Id.* at xlv-xlvi.

29. *Id.* See also *UNEP to Establish Networks on Climate Impact*, 6 WORLD CLIMATE NEWS 9 (1995) (WMO publication). This article delineates the plans that UNEP has endorsed to establish regional and subregional networks devoted to the exchange of information concerning climate change. The first such

Another rudimentary effort to institutionalize some of the adverse secondary effects of climate change was the World Conference on Natural Disaster Reduction in Yokohama, Japan (Yokohama Conference) in May, 1994.³⁰ Among the principles that the Conference adopted was the following: “Environmental protection as a component of sustainable development consistent with poverty alleviation is imperative in the prevention and mitigation of natural disasters.”³¹ Yet, the international consequences of transborder migration are not addressed. In fact, the Yokohama Conference reiterated that national governments bear the primary responsibility for mitigating the effects of disasters.³²

The Intergovernmental Panel Negotiating Committee charged with fleshing out a convention to combat desertification has met several times. The Committee has mainly focused on the scientific aspect of the problem.³³ The Convention to Combat Desertification was adopted by this group in June, 1994, and was open for signature shortly thereafter.³⁴

A solution to the problems posed by large-scale migration due to environmentally spawned “disasters” is very far away. Yet it is not enough to simply leave it to each country to come up with its own response. As the Rio Conference has emphasized, there is a fundamental principle of common but differentiated responsibilities (for all nations), varying according to each country’s capacity. In the joint battle against greenhouse gases, consideration must be given to ways of achieving a substantial transfer of knowledge and technology to the developing countries, while using the funds available globally for climate protection as effectively as possible.³⁵

While there is little doubt that there is a significant percentage of emigration caused by environmental disasters, it is difficult to winnow those

Climate Impacts and Response Strategies Networks is a pilot program called CIRSNet/Africa.

30. *A Safer World for the 21st Century--World Conference on Natural Disaster Reduction, Yokohama, Japan, 23-27 May, 1994*, WORLD CLIMATE NEWS, *supra* note 29, at 8.

31. *Id.* at 9. Global climate change was not seriously addressed at the Yokohama Conference, although great concern was expressed by many delegates. This reluctance to address global warming is possibly due to a natural inclination to look to the short term, rather than the long term, at a time when funding is very tight.

32. *Id.*

33. *A Convention to Counter Desertification*, 4 WORLD CLIMATE NEWS 3 (1994). This group was formed at the behest of the United Nations Conference on Environment and Development [hereinafter Rio Conference] and has met several times.

34. *Desertification Convention Adopted*, WORLD CLIMATE NEWS, *supra* note 29, at 7.

35. *Report of the Conference of the Parties on its First Session, Held at Berlin from 28 March to 7 April 1995*, U.N. Framework Convention on Climate Change, 1st Sess., at 50, U.N. Doc. FCCC/CP/1995/7 (summary of the address by the Chancellor of the Federal Republic of Germany).

from migrants who are pushed from their native lands for other reasons.³⁶ Thus, the term "environmental refugees" has no possible legal standing.³⁷ Yet, the likely number of environmental refugees that may result from the best guesses of the extent of global climate change is so large that an international legal framework should be in place as their numbers rise and the crisis deepens.³⁸ Moreover, as the Rio Conference made clear, the developed countries have an obligation to help the lesser developed countries confront this problem, since the developed countries, by contributing more than their fair share to carbon emissions and thereby to global warming, are complicit.

36. See Léon Tabah, *Population Prospects with Special Reference to the Environment*, in JUST ENVIRONMENTS, 72, 80-81 (David E. Cooper & Joy A. Palmer eds., 1995). In one study conducted in 1985, studying the reasons given for migration in Mali, 51.5% of those surveyed reported drought related reasons, 45.7% reported work or study related reasons, and 2.8% listed family or other reasons for migrating. But it is difficult to say what fraction of the drought is due to global warming and not to normal climatic fluctuations. *Id.* at 80.

37. John I. Clarke, *The Interrelationship of Population and Environment*, in JUST ENVIRONMENTS, *supra* note 36, at 34, 41.

38. Large numbers of migrants are also expected in tropical countries due to pressures from overpopulation and deforestation, and in coastal regions due to water pollution and sea level rise associated with global warming. See Tabah, *supra* note 36, at 80-81.

