

Garrett Hardin's Lifeboat Ethics Applied to Environmental Migrants

BY JOHN CAIRNS, JR.

...all the things they told us couldn't happen happened.

—Mike Williams, Chief Electronic Technician on the oil rig Deepwater Horizon platform (2010)

Garrett Hardin (1974a) warned of the dangers of overpopulation and used the metaphor of lifeboats for nations on Earth whose capacity for human habitation was exceeded and which possessed few resources, or were perceived as having some capacity remaining. Hardin believed that people in the crowded lifeboats were constantly trying to move to the better lifeboats or gain some of their resources.

Extensive information indicates that the human population exceeds Earth's carrying capacity for it. For example, Ecological Overshoot Day for 2009 occurred in September — for the rest of the year, natural capital was used instead of regenerated resources. Ecological deficits have also been calculated and are easily available on the Internet; however, the most telling number is that, if every human on planet Earth lived as Americans do, five Earths would be required to support them.

I have previously used the term *environmental refugees* to describe people who either have or will be migrating because of some environmental disaster that makes their country, or part of it, less habitable. At present, the numbers are still relatively small, but the numbers are not so small that they can be ignored. I have changed my term from *environmental refugees* to *environmental migrants* because these people are migrating to what they hope will be a better situation for them and

their families.

The numbers indicating excess are quite striking — ecological overshoot was 140 percent in 2009 and is likely to be larger in 2010. This number means that Earth, viewed as a lifeboat or a spaceship, is already far over capacity; that is, most of the sovereign nations on Earth are near or over capacity for human habitation, and few have surplus capacity or are under capacity. Still, desperate people lacking food or other resources, such as water, may assume that, however great the risks, migration to a nation that appears to have a surplus would be a good idea.

Prospective “Host” Countries

The factors that force individuals into environmental migration are global and almost certainly will, to some degree, affect everyone sooner or later. Most nations at present are poorly equipped to host large numbers of environmental migrants (by large numbers I mean millions) and will not be capable of providing the food, housing, medical care, and other services that the migrants are hoping to find (including employment).

Ideally, a “host” country for environmental migrants should have resource surpluses and no ecological deficit. However, such an inviting situation is not very common because the human economy depends on the planet's natural capital (Wackernagel et al., 2002), and no import of resources is possible. Nations with no surplus of resources are themselves in danger, or soon will be, especially with the addition of millions of environmental migrants. The noble action appears to be helping these poor and suffering people, despite their large numbers, but what about intergenerational equity? — living unsustainably by continuing practices that lead to environmental migration is unethical because leaving a habitable planet for posterity is impossible in these circumstances (Cairns, 2005). Rigid and firm sustainable practices in the short term may seem hard hearted, but these actions are actually a soft hearted position for the needs of future generations of all nations of all humans on Earth.

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Most nations, possibly all, are not prepared to cope with any type of mass migration, especially if their ecological overshoot is great. Most citizens of the United States assume, because they are living well, their “lifeboat” (i.e., nation) is not over capacity and, in fact, has capacity for more immigrants or migrants. Nothing could be further from the truth. People also assume that nations with considerable population density, such as The Netherlands or Bermuda, have surplus resources within the physical boundaries of their nations. However, The Netherlands is acquiring resources from a considerable area outside the territory it occupies, as is Bermuda. Biocapacity is customarily calculated on the resources generated within the physical boundaries of a particular nation; consequently, all nations (i.e., lifeboats) are at or near capacity. Accepting even a limited number of migrants under such circumstances is likely to place the nation (i.e., lifeboat) at even greater risk than it now is, despite the fact that most of its citizens may not perceive the risk at present. Recognition and acceptance of this hazardous situation is long overdue.

Failed States: A Potential Source of Mass Migration

Failed states are ones with central governments so weak or ineffective that they have little political control over much of their territory, no provision of public services, widespread corruption and criminality, mass migrations and involuntary movement of populations, sharp economic decline or a massive national debt (Failed States Index, 2009). Failed states are now and may be major future sources of environmental migrants that contribute to global instability. A major issue yet to be addressed is which failed states deserve attention, which might well come down to which are deemed to pose the greatest threat to the world at large (Failed States Index, 2009). Many examples are available of food aid being given to a region with many starving people, which resulted in a larger population of starving people with little or no improvement in the quality of life.

What might happen if the wealthier nations of the world do nothing (the default position)? Environmental migrants are inevitable and will have to bear unsanitary,

poor, and crowded living conditions, which are ideal circumstances for the generation of a pandemic disease. However, resources are inadequate to help all failed nations or even a substantial percentage of them. How can donor nations ensure that the resources given will be used to produce a more effective central government? The United States has substantial military forces in some countries and has spent substantial sums of money, but these nations still do not have a stable government that provides the services citizens expect. Furthermore, no indications exist that this desired circumstance will be achieved, which is not surprising with continuing military conflicts in some nations.

How can one be reasonably assured that failed nations are being rehabilitated? No model failed nation has been even partially returned to a functional state. In

addition, each failed nation is unique, so almost certainly no “one size fits all” process for rehabilitation exists. Finally, if a failed nation is receiving assistance (e.g., money and resources) but not improving at expected rates, at what point should the assistance be terminated?

Badly failed nations will probably not be provided with the resources essential for recovery. Even if some failed states are successfully rehabilitated, are risks to the entire world significantly reduced? One possible scenario is that environmental migrants from a badly failed state will migrate to a partially restored nation and undo all the recovery that had been accomplished. The partially rehabilitated nation would almost certainly not have the resources to care for the migrants or the military force to exclude them. This problem has few guidelines, few resources to address it, and the potential for very high risk. It deserves far more attention than it has received thus far. The 2-hour television documentary “After Armageddon” has a thoughtful analysis of the problem of failed states — i.e., all states will fail in an era of globalization.

Reduction in Population Size Is Inevitable

Smail (2004) states:

Looking past the near-term concerns that have plagued population policy at the political level, it is increasingly apparent that the long-term sustainability of civilization will require not just a leveling-off of human num-



Garrett Hardin

bers as projected over the coming half-century, but a colossal reduction in both population and consumption.

He suggests “a future (twenty-third century and beyond) ‘population optimum’ of not more than 2-3 billion.”

In a *Scientific American* interview with Bill McKibben (2010), staff editor Mark Fischetti asked “is zero growth really necessary?” McKibben responded: “... relentless growth is now ruining the globe; maintenance of wealth and resources, instead of expansion, must be society’s new driver, or it will perish.” One might also ask: “Is 140 percent ecological overshoot really necessary?”

Since strong, positive climate feedbacks have not yet been activated (Romm, 2010), the worst catastrophes may be in the not too distant future if business-as-usual continues. The catastrophes would almost certainly dramatically increase the numbers of environmental migrants and the rate at which they are produced.

The problems that humankind faces are exacerbated by eight interactive global crises, all of which must be considered with regard to both each other and the biosphere of which all are a part (Cairns, 2010b). Environmental migrants, overpopulation, and consequent overcrowding of the lifeboat are only part of the eight major global crises (human economy, climate change, exponential human population growth, ecological overshoot, biotic impoverishment and reduction of biodiversity, renewable resource depletion, energy allocation, and environmental migrants [migrants are not at the crisis level at present, but soon will be if business-as-usual continues] [Cairns, 2010b) that are a threat to the biosphere and may be close to irreversible tipping points. If any one of the eight interactive crises passes a tipping point, it will probably act as a threat multiplier for the remaining crises. If this situation occurs, Earth’s long-term carrying capacity for humans might well be below 2 billion and civilization will be facing a monumental crisis (Leigh, 2010).

Resources and Climate Change

Another important consideration is that most citizens proposing the acceptance of immigrants (i.e., environmental migrants) do not understand that, with finite resources, the resources per capita of that nation will be diminished by each immigrant since a finite planet allows each nation only a finite area, particularly arable areas. In addition, global climate change is reducing agricultural productivity and natural resource

productivity in many, if not all, areas of the planet. This reduction means that the carrying capacity of most nations, possibly all nations, has already been significantly reduced and is likely to undergo further reductions in carrying capacity as long as global climate change continues. In short, environmental migrants will probably be produced even if the average global temperature increase is limited to 2°C.

A major unknown is when greenhouse gas emissions will be reduced to match the assimilative capacity for them. Even when a desirable goal is achieved, approximately 1,000 years (Solomon et al., 2009) will be needed for the atmosphere to adjust to this equilibrium. Many environmental changes are irreversible and so the likelihood of having to adjust to a new biosphere and new state of resource generation is highly probable, especially if business-as-usual continues.

One solution to curbing diminishing resources would be to repair damaged ecosystems wherever possible, but such projects are usually long term and have no guarantee of achieving the restoration goals due to global climate change. Krugman (2010) believes that

Environmentalism began as a response to pollution that everyone could see. The spill in the gulf [2010] recalls the 1969 blowout that coated the beaches of Santa Barbara in oil. But 1969 was also the year the Cuyahoga River, which flows through Cleveland, caught fire. Meanwhile, Lake Erie was widely declared “dead,” its waters contaminated by algal blooms. And major U.S. cities — especially, but no means only, Los Angeles — were clouded with thick, acrid smog. It wasn’t hard, under the circumstances, to mobilize political support for action...

because the environmental problems were quite visible, and, as a result, air quality and water quality improved, and so on. However, then Krugman (2010) notes:

Yet there was a downside to this success story. For one thing, as visible pollution has diminished, so has public concern over environmental issues. According to a recent Gallup survey, “Americans are now less worried about a series of environmental problems than any time in the last 20 years.”

The same might be said of the biocapacity of nations (i.e., the lifeboat metaphor) — people cannot easily visualize even the resources they are consuming

let alone the resources that would be consumed by a new immigrant or, more important, the resources that would be consumed by an aggregate of immigrants and their progeny. This lack of revelation is an important issue because, at present, advocating accepting an immigrant by a nation that has exceeded its biocapacity might be regarded as noble by the individual because that individual suffers no appreciable loss, but the loss is suffered by the entire citizenry of that particular nation. If the person proposing that an immigrant be accepted were informed that (s)he would have to give up citizenship in order for a new immigrant to be accepted, the choice might be entirely different. If citizens did give up their citizenship, where would they go? In short, “too many people” are almost everywhere. This position could easily be interpreted as callous because living persons will suffer. What is disregarded, and it is a flagrant disregard, is posterity. If people on Earth live sustainably and each nation keeps its citizenry within its biocapacity, in the long run more people would be likely to inhabit Earth than if biocapacity is ignored and people live unsustainably.



Most political leaders would unlikely keep their elected positions if they were to advocate zero net immigration and told people they would have to make substantial, personal sacrifices to benefit future generations that they would never see. Since World War II, many people have been living in a cornucopian era when expectations are for “more” of everything and everything is “better.” Of course, during this period, about half the world’s population was not living in a cornucopian era. They have already experienced the limits to exponential growth — a concept of Malthus (1798) on the fact that the human reproductive rate is exponential but increase in resources is linear at best.

Australia, which has almost the same area as the contiguous United States, is a good case in point. Much

of Australia, even before the recent droughts and wildfires, did not have a resource regeneration percentage even close to that of the United States. Australia has roughly one-tenth the number of people of the contiguous United States, and its biocapacity is being diminished and has been diminished for some years.

The Maldives in the Indian Ocean are an example of some of the ethical problems involving environmental migrants (Cairns, 2010a). “The Maldives is an archipelago of 1,190 islands in the Indian Ocean, with an average elevation of 4 feet” (Schmidle, 2009), so relatively small storm surges could have a major effect. The Maldives still are not heavily populated, with less than 400,000 inhabitants. President Mohamed Nasheed of the Maldives foresees the future of his nation clearly if business-as-usual continues, and possibly even if it does not. Schmidle (2009) remarks: “I heard countless Maldivians express concern that in a relocation, they would be treated as second-class citizens.” Ideally, the Maldivians should be relocated without damage to their culture, but they are sufficiently numerous so it would be exceedingly difficult to find a home for them in one nation, especially in nations where the biocapacity has already been exceeded. The major problems will begin when areas, such as the Bangladesh delta of the Ganges River, become partially submerged and subject to storm surges and other problems that would affect their agricultural productivity. Exponential human population growth caused the problem and now humankind is faced with hard choices. Should no choices be made (the default position)? If choices are made to provide help, what form should they take and what conditions will be given to the recipients?

Targets for Atmospheric Carbon Dioxide

Hansen (2010) states:

Reality of ongoing global change, specifically: trends of Arctic sea ice, Antarctic and Greenland ice sheet mass balance, shifting climate zones, ocean acidification and coral reef deterioration, and Earth’s energy imbalance all lead to the conclusion that the target atmospheric CO₂ that humanity must aim for is less than 350 ppm. The ultimate target may need to be significantly less than 350 ppm, depending upon other climate forcings, but “<350 ppm” tells us all we need to know: fossil fuel emissions must be phased out as rapidly as possible.

Romm (2009) states:

I have argued that stabilizing atmospheric concentrations of carbon dioxide at 450 ppm or lower is not politically possible today, but that it is certainly achievable from an economic and technological perspective. I do, however, believe humanity will do it since the alternative is Hell and High Water. . . I do believe only “one” solution exists in this sense — we must deploy every conceivable energy-efficient and low carbon technology that we have today as fast as we can. Princeton’s Pacala and Socolow proposed that this could be done over 50 years, but that is almost certainly too slow.

Anyone watching or reading about attempts to reduce the impact of the recent Gulf of Mexico oil disaster [2010] could be forgiven for wondering whether either Hansen’s or Romm’s goals can be achieved in view of the current assault on science. The fact that the 255 members of the National Academy of Sciences (but not acting on its behalf) felt the need to write a letter to *Science* (Sills, 2010) about the assaults on science does not bode well for rapid attempts to limit anthropogenic emissions of greenhouse gases or other measures (e.g., carbon free energy sources) to limit concentrations of carbon dioxide in Earth’s atmosphere. One wonders whether the financial resources or political will are up to the task. As a consequence, preparing for a significant increase in environmental migrants seems prudent.

Literacy Gap

Ehrlich (2010) remarks: “Few non-scientists are familiar with the basic idea that environmental damage is a product of population size, per capita consumption, and the sorts of technologies and social and economic systems that supply this consumption.” In addition, a very aggressive lobbying campaign is attempting to block research on science and by scientists, particularly those studying global warming and other types of climate change (e.g., Goodell, 2010; Dickinson, 2010). Such lobbying efforts may eventually diminish scientific activities, just as lobbyists who denied smoking tobacco was harmful did. The literacy gap between scientists, the general public, and their political representatives is huge. Since the rate of climate change is more rapid than expected and the rate of social change very slow, one can reasonably expect that the changes producing environmental migrants will catch society unprepared to cope with millions of environmental migrants. Gardner (as quoted in Baer, 1996) remarks: “The hallmark of

our age is the tension between aspirations and sluggish institutions.”

Conclusions

The last 200 years almost appear to have been designed to produce large numbers of environmental migrants. The era of cheap, abundant fossil fuels provided energy for the large agribusinesses that produced cheap, abundant food. Nevertheless, billions were either starving or malnourished. In the twentieth century and first few years of the twenty-first century, steady increases in housing prices in most developed countries have been regarded as normal. The human population more than doubled within a single human lifetime. Many people expected this cornucopian era to last forever. All these increases on a finite planet did not seem irrational — technology would produce *more* and it would be *better*. The global financial meltdown early in the twenty-first century put an end to this delusional era. Then, humankind became aware that emissions from cheap fossil fuel were changing the global climate. However, many people are reluctant to abandon business-as-usual even though some climate changes are irreversible (Solomon et al., 2009). Humankind’s actions in the next few years will determine whether the landing is soft, medium, or hard. Climate change, food shortages, continued exponential human population growth, resource wars, and the end of cheap, abundant energy are almost certain to increase the number of environmental migrants in the near future, especially if unsustainable practices are continued. If humankind fails to act now, hope for a soft landing will vanish. A hard landing will cause human death and suffering on an unprecedented scale, and the problems will quickly worsen — no amount of regret from the current generation will comfort posterity. ■

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