

HOMAGE TO GARRETT HARDIN: NOBODY EVER DIED OF GLOBAL CLIMATE CHANGE

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Garrett Hardin published the classic editorial "Nobody Ever Dies of Overpopulation" in 1971, which was based on a cyclone that struck East Bengal (now Bangladesh) in November 1970. Hardin was in Calcutta at the time of the cyclone and notes: "Early dispatches spoke of 15,000 dead, but the estimates rapidly escalated to 2,000,000 and then dropped back to 500,000. A nice round number: it will do as well as any, for we will never know . . . What killed these unfortunate people? The cyclone, newspapers said. But one can just as logically say that overpopulation killed them" (Hardin 1971, p. 527). Since the Gangetic Delta is barely above sea level, only overcrowding forces people to live in this dangerous place, especially in a storm, and humans who live there are at greater risk than those who live on higher ground.

Of course, in any complex, multivariate system, every event has many antecedents. However, questions are appropriate about why so many people live in high risk areas (and the majority of them, arguably all, are poor) and about what led to overpopulation. Hardin asks: "How can we control population without recourse to repugnant measures? Fearfully we close our minds to an inventory of possibilities . . . One thing is certain: we won't blame the deaths on overpopulation. No one ever dies of overpopulation. It is unthinkable."

As usual, Hardin's reasoning was persuasive and, as usual, his thoughts were ignored. Why is that? Brooks (2008) notes:

But especially in America, there has always been a separate, populist strain. For those in this school, book knowledge is suspect but practical knowledge is respected. The city is corrupting and the universities are kindergartens for overeducated fools. The elitists favor sophistication, but the common-sense folk favor simplicity. The elitists favor deliberation, but the populists favor instinct.

However, biological evolution (i.e., instinct) has not prepared humankind for exponential population growth or global climate change caused by anthropogenic greenhouse gas emissions that are unseen, although they can be measured.

Now, approximately 37 years after Hardin's editorial, a similar drama is ready to unfold in the Ganges River Delta in Bangladesh. The Delta is barely above sea level and the seas are rising due to global heating. Salt water already is intruding into the delta area, endangering food production and potable water supplies. Large storm surges from hurricanes can inundate housing and agricultural areas and cause much damage to oil refineries, power lines, and water supplies, as well as interfering with food deliveries and medical assistance, resulting in the displacement of hundreds of thousands of people. Precise death tolls cannot be predicted; however, the important issue is both the number of deaths and the antecedent causes. In the Bangladesh Ganges Delta area, a worse case scenario could temporarily, possibly permanently, damage the important agricultural system in the delta. Environmental refugees could reach 25 million, and the deaths could be in the millions. India is constructing a 2,400-mile, double fence to exclude a massive influx of refugees, which India cannot handle either on a long- or short-term basis.

If global climate change is one of the antecedent causes of the worst case scenario, did sea level rise and severe weather cause the deaths, which would relieve humankind of the responsibility even though it is the source of anthropogenic greenhouse gas emissions that play a significant role in climate change? Fate and acts of God may provide some comfort to those with "tunnel vision." Crowded refugee camps are ideal areas for disease transmission, especially if the refugees are starving, have no adequate waste disposal facilities, and the camps lack potable water and adequate medical services.

September 23, 2008, is Earth Overshoot Day – the day humanity will have used all the resources nature will generate this year (http://www.footprintnetwork.org/gfn_sub.php?content=overshoot). This problem is huge and has rapidly worsened in the last 1½ decades, although it did not attract much attention before 1980. Basically, the problem is that humankind temporarily maintained both overpopulation and a consumer oriented lifestyle by depleting natural capital and the ecosystem services it provides. Examples of such activities are the destruction of old growth forests and depletion of the brood stock of oceanic fisheries. Human demand may well have exceeded the biosphere's regenerative

capacity since the 1980s (Wackernagel et al. 2002). Humanity's load corresponded to 70% of the capacity of the global biosphere in 1961 and grew to 120% in 1999. By 2008, the overshoot has grown to 140% (<http://www.footprintnetwork.org>). If the resource base diminishes, the Earth's carrying capacity is diminished, and the human population is still increasing exponentially. Moreover, abrupt and drastic climate change, which is increasingly probable, could reduce the carrying capacity dramatically.

The approximately 3½ billion people who already have marginal access to resources will suffer and some, perhaps many, will die. However, nobody dies from *ecological overshoot* (a term still not in common use), so how should these deaths be categorized – starvation, disease, or the inevitable resource wars? If deaths are labeled due to global climate change and/or ecological overshoot, isn't humankind at least partly responsible?

I do not believe in depending on something (e.g., technology) or someone (e.g., a politician) to save humankind. If everyone does something to alleviate the present crises, the time will be well spent. If a new helpful technology is developed or an effective political leader emerges, so much the better. Being fatalistic or passive is not appealing. Preserving biodiversity and reducing human suffering is appealing.

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