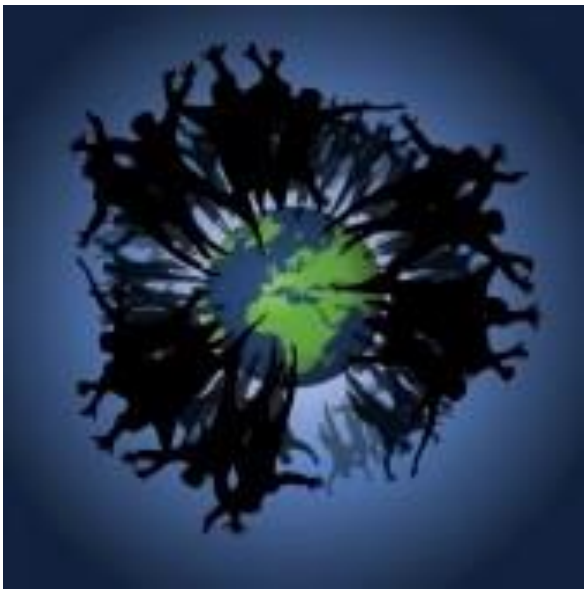
November 7, 2013



Population Statistics: What Should We Make of Them?

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Recently the United Nations has published a revised estimate of the size of future human populations, projecting a rise from almost 7.2 billion people now to 9.6 billion around 2050. How seriously should we take this? The first context in which we might consider these numbers is that of humanity's ecological footprint. Our footprint is *the total area of Earth's land and water ecosystems necessary to produce the resources that humanity consumes, as well as the area required to assimilate the wastes that humanity generates.* Such "ecological footprint analysis" suggests we would need about another half planet Earth to sustain today's population, with today's distribution of wealth and technologies, into the long-term future. Perhaps we should take the revised estimate very seriously. Furthermore, if you, like me, are not charmed by the prospect of having much of humanity living in misery, as it is now, similar analysis indicates we would need several more planets to keep 7.2 billion people living in comfort more or less permanently.

That of course is the long-term outlook. But now the long term is not considered by the vast majority of people, including decision makers. The plain fact that Earth is already overpopulated tends to be denied by most non-ecologist analysts. But one does not need the rather technical "footprint analysis" to understand this. All that is required is to see that humanity is no longer living on the interest from its natural capital: Earth's deep, rich agricultural soils, "fossil" groundwater, and biodiversity; instead it is depleting the capital itself in order to support our massive population. Or consider today's perfect storm of environmental problems, ranging from climate disruption and the spread of toxic chemicals from pole to pole to the extinction of populations of other organisms ("biodiversity") that are the working parts of human life-support systems.

So the first reaction to the UN projections might well be "so what?" Earth is already vastly overpopulated, so what's the difference, say, between having 11 or 12 billion people in

2100, if 7 billion in 2011 was already many too many? My answer is that it is useful to look at long-range projections and consider trends and possibilities. For one thing, the UN projections counter a commonly held belief that birth rates are trending downward everywhere, that there is a "birth dearth," and that Earth is threatened with de-population. It also helps to counter the notion that we now must focus our efforts entirely on curbing overconsumption by the already rich and ignore population trends.

The impacts human societies have on those life-support systems are largely a product of the number of people and their per capita consumption. The roles of each of the two factors in generating the impact are no more separable than the roles that the length and width of a rectangle have in generating its area. (If the length and/or width are growing, obviously one can determine which is contributing what to the increase in area at a given moment.) Past population growth is heavily responsible for the great environmental impact of the United States today; future population growth is likely to enormously increase the impact of U.S. overconsumption. Nigeria's relatively low impact today will explode if its population quadruples in this century, as it is projected to do.

Looking at the UN projections immediately allows us to think about the likely consequences if they are realized. For example, will global supplies of natural capital allow current trends to continue to 2050 or 2100? Will it be possible even to maintain today's inadequate levels of nutrition in the human population? If not, what are the steps that might divert the human trajectory unto a sustainable path before catastrophe overtakes our species?

Sadly, people and societies tend to lack foresight intelligence – attitudes and institutions that look to the future in all its dimensions and then promote action to solve the problems perceived. Dealing with the questions above requires foresight intelligence. Its lack even in segments of the scientific community is underlined by the recent appearance of numerous papers on the problem of how to feed the burgeoning human population in the next several decades in view of a series of obstacles to expansion ranging from land degradation and emerging limits to yield increases in major crops due to changing climates. Virtually that entire literature treats the need to nourish an additional 2.5 to 4 billion people by the end of the century as a given. Not a word on the possibility of humanely reducing the number of mouths that will need to be fed Straightforward future blindness – insanity.

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