The Stork and the Plow: The Equity Answer to the Human Dilemma
Paul R. Ehrlich, Anne H. Ehrlich and Gretchen C. Daily
Putnam, 1995

Reviewed by John McCarthy, Stanford University

1 Introduction

This is the latest (1995) book by the Ehrlichs with the much younger Gretchen Daily as a co-author. There is an enormous difference in tone from Paul Ehrlich's *Population Bomb* of 1968. In the early book, Ehrlich wrote

> The battle to feed all of humanity is over. In the 1970's and 1980's hundreds of millions of people will starve to death in spite of any crash programs embarked upon now.

and continued in his 1974 *The End of Affluence*.

> This vast tragedy, however, is nothing compared to the nutritional disaster that seems likely to overtake humanity in the 1970s (or, at the latest, the 1980s) ... A situation has been created that could lead to a billion or more people starving to death.

These strong statements are what made Ehrlich famous.

The present book is much more moderate and puts the Ehrlichs in the middle of the viewers with alarm. There is a lot of interesting and useful information coming from the authors' travels in Africa and Asia.

2 The Book's Main Contentions

1. The proper sustainable population for the earth is between one and two billion.

2. The United States, because of its high per capita energy use, is overpopulated. They say that an American strains the environment as much as 23 inhabitants of an African country.

3. The impact (harmful of course) of the economy of a country on the world environment is given by the equation

$$I = PAT, \tag{1}$$

where P is the population of the country, A is the average affluence of its citizens, and T is the level of technology used.

4. A good measure of the technology parameter T is the per capita rate of energy use.

5. The world population is pretty sure to reach 10 billion before it starts down.

6. They are hopeful that food production will rise enough to feed the 10 billion. It will require doubling or tripling food production which can probably be done.

   This is the biggest change from Ehrlich's previous views.

7. They are disappointed that the Chinese aspire to a similar life style to that of the West. They regard this life style as unsupportable even in the West.

8. The Chinese are particularly mistaken in trying to fuel their development with coal.

9. The influence of multinational corporations is harmful.

10. The world is using up its nonrenewable resources at an unsustainable rate. The examples they give are minerals and topsoil. They don't give a resource by resource opinion.

11. The increasing use of birth control throughout the world is a hopeful sign that the population will peak out, although there are still countries with extremely high rates of population growth.

12. The noble savage is a myth. Moreover, primitive life was indeed, as Hobbes wrote, "solitary, poor, nasty, brutish and short".

13. The slow growth rate of human population before modern times was due to a balance between birth rate and death rate.

14. The Reagan policy of the U.S. not supporting birth control in undeveloped countries reduced the effectiveness of population control.

3 Major disagreements

Energy The book ignores nuclear energy. I'm not surprised at this, because the topic embarrasses environmentalists, many of whom recognize that it may solve the greenhouse problem but whose heroes sat in in front of nuclear construction projects and whose political heroes are blocking nuclear energy in many countries. I was more surprised that the book also ignores solar energy; at least the two index references refer to the sun only in connection with agriculture. The point is that the environmental effects of energy use about which they complain don't apply to nuclear energy and may not apply to central station solar energy either. [1] Consequently, a major pillar of the argument that the U.S. and other rich countries are overconsuming falls.

The use of nuclear energy has no significant environmental costs and the possible costs of solar produced electricity are at least different from those the authors consider. We cover this point in the Web page on nuclear energy.

$I = PAT$. I have problems with three of the four quantities in the equation. I think the authors and I would agree on what P for population is. A for affluence is somewhat vaguer, but there would be some hope of agreement. T for the amount of technology is very vague if we want to get something that can serve as a multiplier of affluence and population. It would have to be identified with the amounts of some specific technologies, i.e. it would have a substantial additive component proportional to the amount of coal burned. I, for impact, is also vague. Presumably it includes respiratory diseases caused by the coal as an additive component.

Besides my problems with the definitions, I doubt that environmental impact in any sense is likely to limit human population before other

[1] Nuclear energy is discussed in some detail in the Web page: http://www-formal.stanford.edu/jmc/progress/nuclear-faq.html and solar energy in the Web page: http://www-formal.stanford.edu/jmc/progress/solar.html. In the Web version of this review, the references are live.

factors like food and a sense of crowdedness come into play. As I argue in the main page on sustainability[2], this would be at a population in excess of 15 billion, maybe much in excess of 15 billion.

I don't agree that the Chinese are mistaken in aspiring to a Western standard of living, and I think they can have it. I agree that it is unfortunate that the Chinese are increasing their coal use so rapidly. This could be reduced if the world would give the Chinese more help with nuclear energy, e.g. by making major investments.

I don't agree that we are running out of resources. Mineral resources are in good shape, and so is water. Topsoil is more complicated, because the world food glut is inhibiting possible measures to make it a commodity and to explore the possibility of making more of it.

These authors are not alone in supposing that population growth is controlled by a balance between birth rate and death rate. I think this is mistaken, and population was historically controlled socially, mostly by controlling opportunities for young men and women to enter social slots permitting marriage. I plan to elaborate the point, but it isn't central to the present arguments.

The Reagan policy that the U.S. would not push birth control technology was motivated by American internal considerations and was not based on any notion of what world population should be. The effect may have been the opposite of what the Ehrlichs and Daily suppose, especially in India. Birth control technology was already available at affordable cost in underdeveloped countries when Reagan took office. However, the anti-American politics in India and maybe some other countries reacted to the change from birth control being something the U.S. was pushing on the Third World to something the U.S. was denying the Third World. I have some anecdotal evidence that the spread of birth control in India was helped by this.

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[2]http://www-formal.stanford.edu/jmc/progress/