

Peer Review

Review of: "The End of Population Growth: Reaching Humankind's Planetary Limits"

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The End of Population Growth ^[1] is an important book. Most demographic studies estimate that peak global population might occur towards the end of this century – but they ignore the immense challenges of resource depletion and pollution, which strangle economic growth. Drawing upon multiple viewpoints – natural sciences, history, economics, and anthropology – Bardi argues that global population decline could be much more imminent. The continuous rise of chemical pollutants impacting human reproduction may be the most critical factor.

While the 'great population inversion' may help to save the planet, it will be far from easy on societal systems. Bardi provides several examples from history where population decline was severely disruptive.

Background

Bardi is a Member of the *Club of Rome* – an important international organisation that has been wrestling with critical global challenges since 1968 ^[2]. The Club of Rome helped to support the famous *Limits to Growth* study of the 1970s ^[3], which has a retrospective literature that Bardi himself has contributed to ^[4].

Bardi positions *The End of Population Growth*, as a sequel to the original study – as we are now close to the years when some simulations of the World 3 Model showed possible decline in global population. He also shows some updated results from the model towards the end of the book. Just like the original studies, Bardi is careful to recognise that models cannot predict the future. But they can help us understand possible mechanisms of change that we should be concerned about.

Content

There are four main chapters in the book – not counting the useful summary, excellent introduction, and concise conclusion. The first of the main chapters, “*The Great Cycle of the Human Population*,” covers human evolution from hunting apes to the Green Revolution and beyond; it contains some fascinating insights on competition between agricultural and pastoral societies, and the limits of fishing-based cultures, as well as some necessarily dark material on famines.

In the next chapter, Bardi cleverly introduces the limits of population through the perspectives of four scholars – or knights, as he entertainingly introduces them, paralleling the four knights of the apocalypse! The first, of course, is Thomas Malthus – who recognised the roles of famine, war, and plague in keeping population in check. The other three are Edward O. Wilson, who wrote on the sociology and economy of childbearing; John Calhoun, who emphasised the possible role of stress and overcrowding; and Rachel Carson, known for her pivotal work on pollution.

This is followed by a chapter entitled “*Population Control*,” which covers policies that have ranged from encouragement to discouragement of population growth. Bardi leads the reader from European states historically promoting population growth to the *Great Population Scare*, as depicted in books and movies in the mid-20th century. It’s intriguing to read about some of the reactions to a United Nations World Population Conference held in Bucharest in 1974. Bardi recounts how the slogan emerging from the conference “Development is the best contraceptive” was rejected by some countries at the time. Many still see this as being essential today.

The last of the main chapters is simply called “*Case Studies*,” but has much more to it. In actuality, this comes across as being two chapters in one. There are about sixty pages covering historical case studies, followed by another fifty pages dedicated to the future. The historical case studies recount some terrible, tragic instances of past population declines – through mechanisms such as famine and genocide. These include the decline of Rome – possibly associated with lead poisoning; Europe during the black death; tales of Easter Island; the collapse of Norwegian settlements in Greenland; and the Great Irish Famine. Bardi presents the cases with careful language – and removes a few myths in the process. Next comes, what Bardi describes as the largest genocide in history, caused by Europeans colonizing North America. Other cases include population control systems in China; the collapse of the Soviet Union; and a look at Ethiopia.

The material on the future begins with some useful insights from Dennis Meadows. Bardi then brings up some important, serious questions, amongst which are: Who will starve first if food supply runs out? How would society manage an end of economic growth? What will be the impacts of changing technology? What is the role of climate change? I won't give away the answers here – you'll have to read the book.

Overall Assessment

There are several places in *The End of Population Growth* where Bardi returns to the “Seneca Curve” or “Seneca Effect” – the title of one of his previous books ^[5]. He explains how the Roman Philosopher Lucius Annaeus Seneca wrote that “Growth is slow, but ruin is rapid” ^[1]. If Seneca was even remotely correct and applies, then Bardi's reflections on population decline – however it may come about – are essential reading.

Given some of the dark content of this book, it should be sobering. Yet Bardi's writing style is lucid – and enjoyable to read. He knits together profound insights from a careful reading of history through a critical scientific lens. The topic of the book is serious, but as a great humanitarian, Bardi makes it rewarding and hopeful.

References

1. ^a^bBardi, U. (2025) *The End of Population Growth: Reaching Humankind's Planetary Limits*, Winterthur, Switzerland: Club of Rome.
2. [^]Kennedy, C. (2025) *Malthus Enigma: Technology, Science and Policy for a Fragile Earth*, London: Middleton-Wells.
3. [^]Meadows, D. H., D. L. Meadows, J. Randers, and W. W. Behrens (1974) *The Limits to Growth*. 2nd ed. New York: Universe Books.
4. [^]Bardi, U. (2011) *The limits to growth revisited*. Springer Science & Business Media.
5. [^]Bardi, U. (2017). *The Seneca effect*. New York: Springer Publishing.

Declarations

Potential competing interests: No potential competing interests to declare.