

“Limits-to-Growth now means impending disaster”

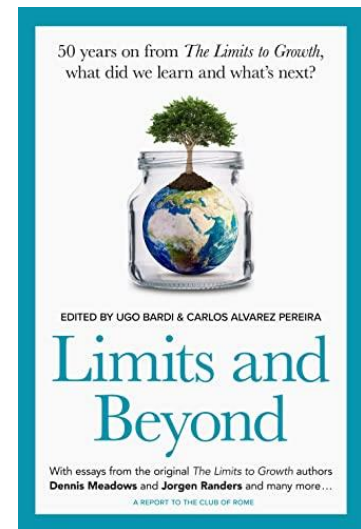
a review by Dick Burkhardt of

“Limits and Beyond -

50 years on from *The Limits to Growth* –

What did we learn and what’s next?”

Edited by Ugo Bardi and Carlos Pereira – A
report to the Club of Rome (2022)



This book is a warning shot across the bow: “All in all, it seems that humanity is thriving and committing suicide at the same time” (p xi). This collection of provocative essays from today’s Club of Rome concludes that the “business-as-usual” scenario of the original 1972 Limits-to-Growth study, as updated in 1990 to add new resources, has proved to be a remarkably good fit to the empirical data since then. This scenario indicates that world industrial production and population will peak around 2040, but that food production will peak around 2025, with rapid declines during the following decades. Even assuming extremely optimistic technological development leads to a major fall in industrial output as resources fail to keep up (p 221).

The founder of the Club of Rome, Italian entrepreneur and Renaissance man, Aurelio Peccei, was a most remarkable person. Already in the 1960s “He clearly saw that inequality and divisions among people would bring only disasters” (p 10). When Peccei met the visionary young engineer and MIT professor, Jay Forrester, in 1968, the stage was set for an investigation that was decades ahead of its time. This used the new technique, called *system dynamics*, that was developed by Forrester for business applications.

Then Forrester turned to urban development and in 1970 he modeled the evolution of world civilization through the 21st century (global resources, food, population, industrial production, and pollution) by systems of differential equations with feedback loops and time delays. Now system dynamics has been extended to create scenarios for climate change. But economists were mired in the

alluring but grossly deficient neoclassical theory and did not understand the math, so they rejected the best “macroeconomics” every done. Only in the 21st century have a few “heterodox economists” developed “biophysical economics” - the dependence of economics on resources, especially energy, and pollution and other environmental impacts. Meanwhile others, like Steve Keen, have begun to apply the nonlinear methods of complexity and chaos pioneered by Forrester to variables of finance and other hard-to-predict economic behavior.

A key problem cited by Ugo Bardi, sometimes called the “energy trap”, is that to transform the global economy toward radically less dependence on fossil fuels will require immense investment. This in turn will depend on current resources, including energy: “We need fossil fuels to get rid of fossil fuels”. In fact “renewable energy still represents only a minor fraction of the world’s energy production”. So “new technologies may well be arriving too late to change the trajectory ... toward collapse” (p 35). And world crude oil production is down 5% from its peak in November, 2018, helping to explain the current trend of the global economy toward stagnation.

Another key problem cited by Bardi is that redistribution of resources may well fail to reduce climate change. That is, shifting resources from the rich to the poor will not reduce green house gas emissions if the poor just end up copying the infrastructure and lifestyles of the rich, a disturbing historical reality. At a minimum “to solve global problems, we need to implement global decision mechanisms and functioning global institutions” (p 36). But Bardi also notes that we “can often avoid overexploitation by maintaining a relatively egalitarian structure that prevents excessive competition among members”, sometimes referred to as “survival of the good enough”, not the fittest (p 43). He concludes that “It may well be too late to avoid a decline” but even to soften the impact will be a worthy uplift toward a more survivable and sustainable world.

The rest of the book elaborates on Bardi’s summary from a variety of points of view from around the world. These contributions demonstrate a growing awareness of the seriousness of our situation but also the limitations of current thought and leadership. For example, the UN sustainable development goals do not recognize limits-to-growth but assume that techno- capitalism will somehow come to the rescue. But the system dynamics shows that this scenario will fail unless accompanied by severe cutbacks in consumption. In fact this now seems unlikely until the 4 horsemen of the apocalypse are on the rampage.

