



SUMMARY OF UPDATE TO LIMITS TO GROWTH: COMPARING THE WORLD3 MODEL WITH EMPIRICAL DATA

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Abstract

"In the 1972 bestseller *Limits to Growth* (LtG), the authors concluded that, if global society kept pursuing economic growth, it would experience a decline in food production, industrial output, and ultimately population, within this century. . . . Since its publication,] previous empirical-data comparisons . . . showed closest alignment with a scenario that ended in collapse. This research constitutes a data update to LtG. . . . The two scenarios aligning most closely with observed data indicate a halt in welfare, food, and industrial production over the next decade or so, which puts into question the suitability of continuous economic growth as humanity's goal in the twenty-first century. Both scenarios also indicate subsequent declines in these variables, but only one - where declines are caused by pollution attributed to greenhouse gas emissions causing climate change]- depicts a collapse."

Melissa Vatterott's Layperson's Summary

In 1992 and 2002, researchers plugged in data from real life into World3 to compare real life to the 1972 model. The 1992 model suggested collapse due to natural resource depletion; the 2002 model realized it'll likely be from pollution - namely greenhouse gas emissions causing climate change - since more non-renewable resources were discovered on the planet than estimated in the 1972 research and we are burning up those resources, causing said pollution.

The research published in this study used nearly two more decades of real life data. It confirmed with several scenarios that civilization collapse is likely by mid-century.

- "Business as Usual 2 (BAU2)" scenario shows collapse due to climate change pollution.
- "Comprehensive Technology (CT)" scenario shows a moderate decline in welfare but no collapse. This is possible if we make serious investments in technology. However, "[g]iven the rising trend in global CO2 emissions so far, halving [pollution emissions as the CT scenario requires] within the next 20 years seems unrealistic."
- "Stabilized world (SW)" is the only scenario without welfare declines, but it is least likely. The possibility window for SW is closing fast. To have a future like the SW scenario, there must be a dramatic shift in global societal priorities as soon as possible.

Such "[a] change in values and policies translates into, amongst other things[:] low desired family size, perfect birth control availability, and a deliberate choice to limit industrial output and prioritize health and education services. . . [W]e should . . . aim for the "social tipping points" (Otto et al., 2020; Westley et al., 2011): a transformation of societal priorities which, together with technological innovations aimed at furthering these new priorities, can bring humanity back on the path of the SW scenario."