



Published on *Climate Realists* (<https://climaterealist.org.nz>)

[Home](#) > Matt Ridley: Technology leads people to live more lightly on the land

Matt Ridley: Technology leads people to live more lightly on the land

Submitted by climaterealist on Wed, 04/07/2012 - 14:00

Part of the preamble to Agenda 21, the action plan that came out of the Rio Earth Summit of 1992, [reads](#) [1]: "We are confronted with a perpetuation of disparities between and within nations, a worsening of poverty, hunger, ill health and illiteracy, and the continuing deterioration of the ecosystems on which we depend for our well-being."

In the 20 years since, something embarrassing has happened: [a sharp decrease](#)[2] in poverty, hunger, ill health and illiteracy and a marked [reduction in these global disparities](#)[3]. The conference that begins next week in Rio de Janeiro, on the 20th anniversary of the first Earth Summit, will nonetheless remain resolutely pessimistic about the planet's ecosystems and their capacity to support human beings indefinitely if economic growth continues. The reasoning has changed over time, however.

For example, from [here](#) [3]: Although world population has increased by about 80% over this time (World Bank 2009), the number of people below the \$1 a day poverty line has shrunk by nearly 64%, from 967 million in 1970 to 350 million in 2006. As for inequality, see chart above.

The original claim, based on the influential 1972 best seller "The Limits to Growth," by the Club of Rome, was that resources would have begun to run out by now. Instead supplies of minerals have increased, thanks to ingenuity, technology and demand.

Later the emphasis shifted to humankind's "ecological footprint," which, it was claimed, was exceeding the planet's carrying capacity. But this, too, took a blow when the most thorough assessment of the world's ecology, by Helmut Haberl of the University of Klagenfurt in Austria, [found](#) [4] that people and their domestic animals were eating or damaging just 23.8% of the vegetation growing on land, and that in richer parts of the world they were enhancing the productivity of the remaining vegetation by almost as much through irrigation and fertilizer.

The Riocrats now have a new tack, which will dominate next week's discussion: planetary boundaries. An [influential paper](#) [5] in 2009 written by Johan Rockstrom of Stockholm University and 28 colleagues argued that there are nine thresholds, crossing any of which will trigger collapse of the Earth's life support systems: land-use change, loss of biodiversity, nitrogen and phosphorus levels, water use, ocean acidification, climate change, ozone depletion, aerosol loading and chemical pollution.

The trouble with this approach, according to [a new report](#) [6] by Linus Blomqvist, Ted Nordhaus and Michael Shellenberger of the Breakthrough Institute in San Francisco, is that, for six of these measures, "there are no global tipping points beyond which these ecological processes will begin to function in fundamentally different ways. Hence the setting of boundaries for these mechanisms is an arbitrary exercise."

A good example is land-use change. The Rockstrom paper suggested that if human beings convert 15% of the land surface of the Earth to cropland, the world will pass a tipping point, because as marginal land gets exhausted, a small increment in food demand would produce an accelerating increase in cultivation. Currently we cultivate about 11.7% of the land. Yet there is no evidence that anything special happens at 15%. In the [words](#) [7] of Steve Bass of the International Institute for Environment and Development in London, "If anything, the opposite has probably been more true: Converting land for farming and for industry has clearly delivered a great deal of well-being."

Furthermore, the use of synthetic fertilizer has kept that percentage lower than it would otherwise have been. The independent scholar Indur Goklany [argues that](#) [8], "had global agricultural productivity been frozen at its 1961 level, then the world would have needed over 3,435 million hectares (Mha) of cropland rather than 1,541 Mha actually used to produce as much food as it did in 2002." That saved an area about as large as is set aside for conservation.

The "boundaries" approach needs to incorporate the possibility that, thanks to technology, fossil fuels and minerals, people are already living more lightly on the land than we did in the past.

Matt, an acclaimed author and former Science and Technology Editor for the Economist blogs at www.rationaloptimist.com^[9]

Tags:

[Article](#) ^[10]

Powered by [Drupal](#)

Source URL: <https://climaterealist.org.nz/node/909#comment-0>

Links

[1] http://www.un.org/esa/dsd/agenda21/res_agenda21_01.shtml

[2] <http://yaleglobal.yale.edu/content/little-notice-globalization-reduced-poverty>

[3] <http://www.voxeu.org/index.php?q=node/4508>

[4] [http://www.eoearth.org/article/Global_human_appropriation_of_net_primary_production_\(HANPP\)](http://www.eoearth.org/article/Global_human_appropriation_of_net_primary_production_(HANPP))

[5] <http://www.ecologyandsociety.org/vol14/iss2/art32/>

[6] http://thebreakthrough.org/blog/2012/06/planetary_boundaries_a_mislead.shtml

[7] <http://www.nature.com/climate/2009/0910/full/climate.2009.94.html>

[8]

<http://goklany.org/library/Goklany%20Technological%20substitution%20in%20ecosystem%20services.pdf>

[9] <http://www.rationaloptimist.com/>

[10] <https://climaterealist.org.nz/taxonomy/term/1>