

We Can't Avoid Climate Breakdown Without Reducing Growth, Leading Economist Says



Herman Daly – Photo: Youtube.com

The current economic system is at the heart of the climate breakdown, argues Herman Daly, a leading expert in the field of ecological economics who for many decades has been at the forefront of the struggle to redirect economics toward environmental sustainability. For his contributions to economics and the environment, Daly has received numerous prestigious awards, including Sweden's Honorary Right Livelihood Award, the Heineken Prize for Environmental Science awarded by the Royal Netherlands Academy for Arts and Sciences, the Leontief Prize for contributions to economic thought, and the Medal of the Presidency of the Italian Republic. In this exclusive interview for *Truthout*, Daly — who is now professor emeritus at the University of Maryland School of Public Policy and who once served as a senior economist at the World Bank — explains why the current economic system is destroying the environment and outlines the policy steps that the world must take in order to achieve a sustainable future.

C.J. Polychroniou: You have been arguing for many years now that the present economic system, formed around the principles of neoclassical economics, ignores planetary limits and, as such, it is destroying the fabric of the ecology on Earth and posing an existential threat to humanity. However, it is only rather recently that this message has been making inroads into the wider public due to the increasing awareness of the link between fossil fuels and the climate crisis. Can you briefly describe the way the current economic system impacts on the global

ecosystem and is responsible for the climate crisis?

Herman Daly: Today's economy impacts our environment in the same way that a size 12 foot impacts a size 10 shoe — it stretches the shoe out of shape while painfully squeezing the foot. The ecological-economic term for this is "overshoot," consisting of excessive *takeover* of land capable of supporting the capture of the current flow of solar energy by photosynthesis, and excessive *drawdown* of fossil fuels (the stored stock of the solar energy of Paleolithic summers), as well as other mineral deposits. It is these physical resources that human labor transforms into the psychic experience of the enjoyment of life, and into physical waste. The rate of transformation is excessive if it exceeds the rate of regeneration of renewable resources, the absorptive capacity of the environment for wastes, or the rate of improvement of resource-saving technologies.

Our current excessive rate of transformation of resources into wastes, the "metabolic throughput," is driven by the excessive scale of population times the excessive scale of per capita resource consumption, relative to the finite and entropically constrained biosphere in which we live. Climate change is only one symptom of overshoot, although the major one. Other symptoms of overshoot include biodiversity loss, disruption of the biosphere with novel substances (tetraethyl lead, endocrine disruptors, radioactive materials, etc.) with which the biosphere has had no evolutionary experience, plus increasing inequality and poverty, sometimes resulting in violence.

In spite of all the evidence about the catastrophic effects of burning fossil fuels on the climate, the world systematically continues to emit carbon emissions into the atmosphere. Why is it so hard to come up with a reasonable policy that limits significantly the use of fossil fuels?

Because fossil fuels concentrate so much energy in such a small and convenient form compared to alternatives. Also, fossil fuels are collected from underground, and unlike the energy alternatives of wood or fodder for draft animals, do not compete with agricultural land surface for human food. Given the enormous stocks of fossil fuels, we were able for many years to live off of past accumulated "capital" rather than current solar "income." This enabled the excessive scale of the human economy, the overshoot that is now coming to a forced end thanks to the combined costs of depletion and pollution that we could ignore in the empty world before we filled it with goods, "bads" and people.

We could and should transition to renewable resources, but that will require a reduction in the scale of the human economy to a smaller level that could be maintained more or less in a steady state. Renewable resources become nonrenewable if exploited beyond sustainable yield. Growthist values would have to be replaced by an ethic of sufficiency, sharing and qualitative development rather than quantitative growth. The fossil fuel industry strenuously resists this change in an effort to hold on to their enormous resource rents and monopoly profits. Transition to renewable energy should be encouraged, but there is a lot of unfounded optimism that renewables will be cheap and plentiful enough to replace fossil fuels without a reduction in the scale of the economy, or even in its rate of growth. The need to reduce the human scale is primary. Short of that, we can and should increase allocative efficiency by internalizing external costs, and improve distributive fairness by redistribution. But unless we also reduce the scale of the macroeconomy to a sustainable level, we will just be making the best of an ever-worsening situation, given that growth itself has become uneconomic.

The scale of the economy is the product of population times per capita resource consumption. A lot of ideological ink is wasted arguing over whether it is population increase or per capita consumption increase that is responsible for excessive scale. That is a bit like arguing whether it is length or width that most determines the area of a rectangle. In my lifetime, world population has quadrupled (from 2 to 8 billion), while [highly variable and unequal] per capita consumption has grown even more, perhaps nine-fold depending on how measured. Neither factor can be neglected.

You have introduced the concept of uneconomic growth to indicate that “growth is uneconomic when it increases environmental and social costs by more than it increases production benefits.” Indeed, you have rejected the idea that economic growth is a good measure of human well-being, and, in contrast, you call for a transition to a steady-state economy.

Growth was economic when the world was empty of us and our stuff. Now it is full, and further growth of our economy into the finite biosphere causes increasing marginal costs of preempted life support services in order to satisfy decreasing marginal benefits of trivial consumption that has to be aggressively advertised to be sold. Growth in rich countries now costs more than it is worth, it is uneconomic, even while growth in poor countries remains economic until they have reached a similar level of sufficiency. The poor cannot attain sufficiency

unless the rich make ecological room for them.

First, what are the policies suggested by steady-state economics? Second, is a steady-state economy a green economy? And, third, how does a steady-state economy balance conservation with growing human needs?

Ten policies for moving toward a steady-state economy are listed below. Many could be adopted independently and gradually, although they cohere in the sense that some compensate for the shortcomings of others. Of course, the question of the desired level of steady-state economy is crucial, and local, regional and global ecological limits must be considered in fashioning effective policies. Ten is an arbitrary number in order to be specific and focused. The reader is invited to add, subtract or consolidate.

Developing Cap-Auction-Trade systems for basic resources (especially fossil fuels): Set caps for basic natural resources according to three key rules: (1) renewable resources should not be depleted faster than they regenerate; (2) nonrenewable resources should not be depleted faster than renewable substitutes are developed; and (3) wastes from all resource use should not be returned to the ecosystem faster than they can be absorbed and reconstituted by natural systems. This approach achieves sustainable scale and market efficiency, avoids the [Jevons rebound effect](#) whereby increased resource efficiency induces greater use of the resource, and raises auction revenue for progressive redistribution.

Tax shifting: Shift the tax base from “value added” (labor and capital) to that to which value is added, namely natural resource throughput, which has become the limiting factor. Such taxes will raise the price of the limiting factor, improving allocative efficiency and inducing resource-saving technology, as well as providing government revenue.

Limiting the range of inequality: Establish minimum and maximum income limits, maintaining differences large enough to preserve incentives, but small enough to suppress the plutocratic tendencies of market economies which have become extreme. Also remove rival goods and services from the open-access commons (e.g., atmospheric waste absorption) and tax them for the public benefit, while freeing non-rival goods (e.g., knowledge and information) from the artificial scarcity needed to make them fit the price system. That is, stop treating the scarce as if it were free, and stop treating the free as if it were scarce.

Reforming the banking sector: Move from a fractional reserve banking system to 100 percent reserve requirements on demand deposits. Money would no longer be mainly interest-bearing debt created by private banks, but non-interest-bearing government debt issued by the Treasury. Every dollar loaned for investment would be a dollar previously saved by someone else, restoring the classical balance between investment and abstinence from consumption, and dampening boom and bust cycles, as well as inflationary tendencies.

Managing international trade for the public good: Move from free trade and free capital mobility to balanced and regulated international trade. While the interdependence of national economies is inevitable, their integration into one global economy is not. Free trade undercuts domestic cost-internalization policies, while also encouraging cheap-labor policies, leading to a competitive race to the bottom by underpricing resources and labor. Free capital mobility also invalidates the basic comparative advantage argument for free trade in goods.

Expanding leisure time: Reduce conventional work time in favor of part-time work, personal work and leisure, thereby embracing well-being as a core metric of prosperity while reducing the drive for limitless production. From a welfare perspective, in our current society the freedom to choose between the basic alternatives of work time and leisure time is highly restricted, while the freedom to choose between a thousand brands of breakfast cereal is guaranteed.

Stabilizing population: Strive toward a balance in which births plus in-migrants equals deaths plus out-migrants, and in which every birth is a wanted birth, and every immigrant has legal documentation.

Reforming national accounts: Separate GDP into a cost account and a benefits account so that throughput growth can be stopped when rising marginal costs equal falling marginal benefits and further growth becomes uneconomic. Accurately measuring costs and benefits is difficult, but even inaccurate measures and comparisons makes a lot more sense than simply conflating them under the rubric of “economic activity.”

Restoring full employment: Restore the U.S. Full Employment Act of 1945 and its equivalent in other nations in order to make full employment once again the end, and economic growth the temporary means. Un/under-employment is the price we pay for growth from automation, off-shoring, deregulated trade and a cheap-labor immigration policy. Under steady-state conditions, productivity improvements

would lead to expanded leisure time rather than unemployment.

Advancing just global governance: Seek world community as a federation of national communities, not the dissolution of nations into a single “world without borders.” Globalization by free trade, free capital mobility and [mass crisis-driven] migration dissolves national community, leaving nothing to federate. Such globalization is individualism writ large — a post-national corporate feudalism in a global commons. Instead, strengthen the original Bretton Woods vision of interdependent national economies, and resist the World Trade Organization vision of a single integrated global economy. Respect the principle of subsidiarity: although climate change and arms control require global institutions, basic law enforcement and infrastructure maintenance remain local issues. Focus our limited capacity for global cooperation on what truly demands it.

What practical steps need to be taken to make the transition to a steady-state economy, and what role do you see activism play in helping us make the transition to a sustainable future?

Good policies based on sound scientific and moral understanding are necessary but not sufficient. Passionate activism in support of the policies is also necessary, but insufficient. We need both — both mind and spirit, both intellectual understanding and moral inspiration — if we are to sustain with justice the miraculous world we have inherited, and which is now under very serious threat of self-destruction.

This interview has been lightly edited for clarity.

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