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**The Steady-State Economy As A Solution to The World's Problems: A Theoretical Examination of The
Greatest Environmental Problem Facing Human Society**

Abstract

This paper is a theoretical exploration of the questioning, if you were given a magic power to solve one, and only one, of the world's problem outlined by a classic environmental author, which would you solve, and why? While the field of environmental studies is relatively new, since the publishing of Malthus' *An Essay on the Principles of Population* environmental scholars have been debating what should be considered the greatest environmental problem facing humanity. This paper explains how the creation of a steady-state economy to replace our current economic system, as described by Herman Daly, offers a holistic solution to the world's problems. It briefly outlines how the steady-state economy would operate, and then overviews how the creation of a steady state economy would create the solution to many other world problems outlined by other classic environmental authors.

Introduction:

Given the power to miraculously solve a single problem facing the world today, as described by a classic environmental author, I would choose to solve growthmania by creating a worldwide steady-state economy as described by Herman Daly's *Toward A Steady-State Economy*. Growthmania is the single largest world problem; it is the backdrop to major global systems and ways of life, and as such the cause of many economic, social, political and particularly environmental problems. Creating a steady-state economy not only solves growthmania, it creates ripple effects which solve worldwide problems including population growth, non-renewable energy systems, unsustainable technology and exploitation of world commons in addition to improving quality of life around the world. As a systematic solution

that solves many of the other problems we have discussed in Classis, creating a steady-state economy is the most effective use of my magic wand.

The Problem and Its Solution: Growthmania and the Steady-state Economy

Herman Daly describes the world's greatest problem as growthmania, defined as "the paradigm or mind-set that always puts growth in first place - the attitude that there is no such thing as enough, that cannot conceive of too much of a good thing," (1973, p. 149-150). Growthmania tells us we must sustain constant growth to prosper, and that more growth is the solution to all of our problems. Growthmania tells us poverty can be solved by economic growth which allows others to grow, that we can surmount natural resource limits by growing to create better technology, to grow to afford the cleanup of pollution we created by growing. All this growth is causing huge problems. As Daly puts it

"The fragmentation of knowledge and people by excessive specialization, the disequilibrium between the human economy and the natural eco-system, the congestion and pollution of our spatial dimensions of existence, the congestion and pollution of our temporal dimensions of existence with the resulting state of harried drivenness and stress- all of these evils and more are symptomatic of the basic malady of growthmania." (1973, p. 149)

The reason growthmania is the cause of so many world problems is its fundamental opposition to natural ecosystems. Natural systems exist in a steady-state, constantly recycling resources in closed loops without need for continued inputs. On the other hand, modern human systems built on growthmania adopt a cradle-to-grave model, requiring more inputs and more waste to sustain constant growth. These two systems are fundamentally at odds with each other:

"The world is finite, the ecosystem is a steady-state. The human economy is a subsystem of the steady-state ecosystem. Therefore at some level and over some time period the subsystem must also become a steady-state, at least in its physical dimensions of people and physical wealth. The steady-state economy is therefore a physical necessity." (Daly, 1973, p. 153)

It is impossible to maintain a system of growthmania, built on linear production system requiring constant inputs, under an overarching natural steady-state closed loop system. Eventually nature will win out, and humans will have to adapt to a steady-state way of life. "In sum the steady-state is necessary. It must be the norm," (Daly, 1973, p. 154).

A steady-state does not mean we must stop our intellectual or moral growth, but rather that we reach a point of steady physical consumption to live on a finite planet. Daly defines a steady-state as:

"A steady-state is defined as an economy in which the total population and the total stock of physical wealth are maintained constant at some desired levels by a "minimal" rate of maintenance throughput (i.e., by birth and death rates that are equal at the lowest feasible level, and by physical production and consumption rates that are equal at the lowest feasible level). ...Minimizing throughput implies maximizing the average life expectancy of a member of the stock." (1973, p. 152)

So with my magic wand I am choosing to turn the world into a steady-state economy where resource consumption is constant, and at a "minimum" possible rate given our current social and technological capabilities. If done correctly this creates a worldwide economic system which promotes equality, efficiency and sustainability through closed loop cycles with feedback devices, fixing many current worldwide social, economic and environmental problems.

This type of steady-state is reached by key measures outlined by Daly's book, implemented on a worldwide scale. To create constant physical wealth, world wealth is distributed evenly throughout the globe by social institutions. Minimum and maximum income levels are set; below the minimum income taxes are negative, income above the maximum is taxed at 100% and used to fund worldwide social programs. Extraction quotas are set for all natural resources, which drives the prices of non-renewable resources up and promotes the optimum sustainable yield of renewable resources. Extraction quotas provide incentives to create closed loop manufacturing, increasing efficiency and recycling, minimizing throughput and maximizing the utility life expectancy of goods. Population is stabilized using child

licenses; each individual receives on license which can be traded for a set price incentivizing birth rate settlement at replacement rate.

Daly argues, and I agree, that stopping growthmania through the creation of a steady-state economy will be the most productive way to solve our world's problems. The first reason is that, "The steady-state paradigm, unlike growthmania, is realistic because it takes the physical laws of nature as its first premise," (Daly, 1973, p. 170). In a steady-state economy we stop the increasing consumption and resource exploitation that is in fundamental opposition to nature, and create completely closed loops systems with feedback devices that maintain an optimum equilibrium within natural systems. Secondly, Daly believes in the steady-state economy because it is a holistic solution. Instead of addressing a single problem, the steady-state economy creates a *system* that takes into account social, political and ecological needs, one that promotes equity and sustainability. As Daly says:

"Unless the physical, the social, and the moral dimensions of our knowledge are integrated in a unified paradigm offering a vision of wholeness, no solutions to our problems are likely. John Stuart Mill's idea of the stationary state seems to me to offer such a paradigm." (1973, p.173)

The steady-state economy is holistic; it addresses many problems by looking at systems, not pieces, to create universal, not fragmented, solutions which complement and build off each other.

Daly admits that "Such a policy is radical, but less radical than attempting the impossible, i.e., growing forever," (1973, p. 163). The steady-state economy fixes worldwide problems of natural resource extraction and world inequality; it creates solutions to stabilize population into a steady-state of equal birth and death rates; it insures we live sustainably within the limits of the earth.

Why the Steady-State Economy Is the Most Effective Solution to World Problems

While the first section of this paper described the benefits and importance of the creation of a steady-state economy, there are a significant number of classic environmental authors who would undoubtedly

claim growthmania is not the world's most important problem or that the steady state is not the best answer.

One of the oldest problems identified as a global issue is population growth, as brought up by Thomas Malthus in his *Essay on the Principle of Population* (1817). Malthus' basic theory is that population growth is exponential and will therefore easily outstrip food supply which grows only arithmetically. These ideas are embodied and expanded upon by Paul Ehrlich in *The Population Bomb* which describes how population growth will destroy our natural resources and lead us into a world of chaos and terror. Malthus and Ehrlich would argue that population growth is the most important problem facing the world because of the natural resources it takes to sustain large populations.

Yet, the problem of population growth is really just another face of growthmania, and is fully addressed as a major component of the steady-state economy as Daly describes it (1973). In Daly's steady-state economy the use of birth licenses stabilizes birth rates at replacement level, without taking drastic and perhaps unethical measures. Even without my magic wand and birth licenses secondary effects of a steady-state economy include population stabilization and even shrinkage. The steady-state redistributes wealth evenly throughout the world, effectively ending poverty which greatly improves women's access to education; higher women's education level is closely correlated with lower birth rates. Wealth equality and education will also increase women's access to birth control. More women will have the resources to enter the work force, which delays childbirth and promotes having fewer children. Therefore, the steady-state economy stabilizes the population.

Still, Malthus and Ehrlich argue that our current world population, even with zero growth, is too large to be sustained and must be reduced at all costs. This argument too is compensated for in a steady-state economy. The steady-state economy is based on being in equilibrium with natural systems; a steady-state is reached, and then adjusted to reflect the earth's carrying capacity. Extraction quotas drive up the price of non-renewable resources, push us toward renewable resources and promote a

population level that can be sustained by close loop production and constant throughput. Population fluctuates in response to prices changes until it reaches a sustainable equilibrium. Furthermore, the steady-state economy does this not through forced sterilizations (Earlich, 1968) or allowing famines to run unchecked (Malthus, 1826) but by providing education opportunities and economic incentives that promote general human and ecological welfare.

Other classic environmental authors do not believe that population issues are truly the biggest modern challenge; some argued that it is in the field of energy that we face our greatest world problems. Today we are almost completely dependent on non-renewable fuels to run basically every aspect of our economy and therefore our daily lives, and the demand for non-renewable fuel has grown incredibly rapidly with modern industrialization. Some say that, as the driver of our current world system, energy is a problem that should be addressed before growthmania.

Avery Lovins explains that the problem in the energy sector is our attempt to sustain unsustainable growth to meet rising energy demand by continually growing energy production;

“Most official proposals for future U.S. energy policy embody the ... goals of sustaining growth in energy consumption (assumed to be closely and causally linked to GNP and to social welfare)... . The usual proposed solution is rapid expansion of three sectors: coal (mainly strip-mined, then made into electricity and synthetic fluid fuels); oil and gas (increasingly from Arctic and offshore wells); and nuclear fission (eventually in fast breeder reactors),” (Lovins, 1976, p. 187).

The policy of continued growth of energy production is unsustainable and may cause a devastating economic crash as we reach the end of our non-renewable supplies. To avoid an economic crash Lovins suggests that we take a “soft energy” path by reducing our reliance on non renewable resources. He suggests we do this by decreasing energy demand through behavioral changes, significantly increasing energy efficiency, and meeting demand through renewable energy sources (Lovins, 1976).

Taken in this light the ‘energy problem’ can be seen as just another form of growthmania, one that is thoroughly addressed by creating a steady-state economy. The extraction quotas on natural

resources set by the steady-state economy include limits on oil, coal and natural gas that are currently our main sources of fuel, driving up their prices. This creates a strong economic incentive to reduce energy waste, increase energy efficiency of systems (in cars, buildings, manufacturing processes etc.) and to find new ways of doing things that are less energy intense to decrease our overall energy demand (Daly, 1973). Extraction quotas also promote the further development of renewable energy technologies, for which Lovins advocated (p. 197-198, 1976). By creating a steady-state economy we will also be dealing with our energy issues. However, other classic environmental authors argued that our energy problems are just a subset of the problems in the technology we have adapted to run our world systems in the past half century, and that technology is the most important problem to address.

In his book *The Closing Circle* Barry Commoner explains how, particularly since WWII, the industrialized world has created processes that requires more resources to produce goods, and that these processes create far more pollution than more conventional production methods (1972, p 128-129). Commoner would say that it is not an energy problem we face, but one of the technologies used to produce goods and services. The world's obsession with consumerism and convenience, fueled by cheap energy, has meant that consumption of resources has skyrocketed, producing massive amounts of waste and pollution which has had terrible consequences on health and the environment. Commoner suggests that we need to learn from nature to create a more sustainable technology and systems of living (1972).

This problem too is really just another expression of growthmania that can be solved by the steady-state economy. Technology, as described by Commoner, creates products that are consumed faster and have short life spans to increase consumption of disposable products so that we buy more products to fuel economic growth. Commoner's solution of modeling natural processes in our production of all goods and services is a pillar of a steady-state economy, closed loop production. As extraction tariffs are placed on resources, prices will rise to incentivize manufacturing systems and

technology that extends the useful life of our resources. The steady-state economy will spur innovations in closed cycle manufacturing, where products will last for much longer and can be completely biodegraded or recycled and turned into a similar product, instead of ending up in a landfill. Under the steady-state economy pollution becomes a form of waste that is increasingly expensive to produce. Because of a steady-state economy our technological systems will transform to mirror the natural processes and the problem of technology that Commoner describes will be solved.

Population, energy and technology are all specific pieces of larger systems- and are therefore fixed by the systematic solution of a steady-state economy; however Garret Hardin would say that it is a different kind of systematic problem we are facing. Hardin argues in *Tragedy of the Commons* (1968) that it is the exploitation of the world's commons through practices of unjust resource extraction and unpenalized pollution, not growthmania, this is the world's largest problem. He states that when people can take global resource for free they will exploit these resources for their own benefit, to the detriment of the common good. Hardin argues that the solution to commons exploitation is "mutual coercion, mutually agreed upon" (1968, p. 111) or the universal and agreed upon limiting of individual freedoms to use global resources, which allows these resources to be preserved for the good of all humanity. Hardin might argue that commons exploitation should be the first problem to be fixed by my magic wand through mutual coercion mutually agreed upon.

But yet again, one can see that commons exploitation is just another problem of growthmania. When growth is the goal people will undoubtedly exploit common resources, which they can use for free with little negative consequences to grow for their own personal gain, as described in *Tragedy of the Commons* (Hardin, 1968). Furthermore the creation of the steady-state economy solves this problem; growthmania is stopped so people are no longer incentivized to exploit the commons. In many ways the steady-state economy mirrors Hardin's solution of "mutual coercion, mutually agreed upon". The

steady-state economy limits population, places quotas on resource extraction and distributes wealth roughly equally among the world population; these measures place limits on individual freedoms (the freedom to freely reproduce and to accumulate mass quantities of wealth) to preserve the common good on a world-wide scale. Another problem solved by the steady-state economy.

Despite the fact that it can be shown that the steady-state economy solves numerous world-wide problems, our current society is so locked into the mindset of growthmania that many fear a steady-state economy would create a world much less desirable than our current one because it reduces the amount of physical goods we consume. However, as John Stuart Mill, Daly's inspiration, suggested in his original paper on the idea of a 'stationary state', "I am inclined to believe that it would be, on the whole, a very considerable improvement on our present condition," (1848). A steady-state does not mean that there is no moral or intellectual growth within the human population; in fact its goals are quite to the contrary. The steady-state economy will allow focus to be shifted from constantly increasing the world wide GDP or economic growth to maximizing human wellbeing. As the steady-state economy creates steady rather than increasing demand, "the focus of technological efficiency must shift from increasing output per constant period of labor time to decreasing labor time per constant quantity of output. The fruits of technical progress must be taken in the nonphysical form of increased leisure time." (Daily, 1973, p. 157). The steady-state economy prevents the cycle of consumerism with its provision of a maximum wealth, and instead promotes efficiency which allows for a healthy balance of leisure and work time. Instead of mindlessly attempting to increase their supply of wealth people will be encouraged to pursue their "right livelihood" as described by E. F. Schumacher (1973). As James Speth shows in *The Bridge at the End of the World* human happiness does not come from money once the basic necessities of life are met, but instead from doing fulfilling work and having deep relationships with others (2008). A global steady-state will eradicate poverty and insure that all have the means to provide for life's necessities, but then encourage more leisure time to nurture relationships and make

work more fulfilling. It allows us to focus on moral, cultural and social progress in harmony with nature instead of blindly destroying our earth and each other in an attempt to gain wealth.

Conclusion

This paper has clearly shown that a steady-state economy is the best solution to world problems, of those problems outlined by classic environmental authors. Because it is a systematic rather than single-issue approach the steady-state economy creates a holistic solution that solves multiple problems with one wave of my magic wand. It will solve the human population crisis, incentivize the creating of a soft path for our energy future, create closed loop technology that emulates natural system and minimizes waste. The steady-state economy will preserve the global commons from exploitation and create a world system where human mental and moral development is the goal, rather than economic growth. Not only does the steady-state most effectively solve the world's most difficult problems, it creates a world in which people would really want to live.

Bibliography:

- Commoner, B. (1971). *The closing circle: Nature, man, and technology*. New York: Alfred A. Knopf.
- Daly, H. E. (1973). *Toward a steady-state economy*. San Francisco: W. H. Freeman.
- Ehrlich, P. R. (1968). *The population bomb*. New York: Ballantine Books.
- Hardin, G. (1968). The Tragedy of the Commons. *Science*, 162, 1243-1248
- Lovins, A. B. (January 01, 1976). Energy Strategy: The Road Not Taken?. *Foreign Affairs*, 55, 1, 65-96.
- Malthus, T. R. (1798/1817). *An Essay on the Principles of Population*.
- Mill, John Stuart. *Principles of Political Economy with some of their Applications to Social Philosophy*. William J. Ashley, ed. 1909. Library of Economics and Liberty. Retrieved April 18, 2011 from the World Wide Web: <http://www.econlib.org/library/Mill/mlP61.html>
- Schumacher, E. F. (1973). *Small is beautiful: Economics as if people mattered*. New York: Harper & Row.
- Speth, J. G., Zinn, D., & Yale University Press. (2008). *The bridge at the end of the world: Capitalism, the environment, and crossing from crisis to sustainability*. New Haven, Conn.: Yale University Press.