

Michael Clow
Saint Thomas University Fredericton,

ETHICS, ECOLOGY AND DEVELOPMENT

What will it take for humanity to achieve both economic equity amongst ourselves and harmony between ourselves and the rest of the living Earth? The answer depends how we understand the world's political, economic and social system, and what we face by way of ecological constraints. Only with this knowledge can we gauge our options and the ethical challenges we face in the 21st century.

According to the much cited Brundtland Report, *Our Common Future*, we can have it all – economic growth, lessening of poverty in the Third World, and recovery from environmental degradation – without fundamental social, political and economic change.¹ Brundtland assumed *reckless exploitation of renewable resources and dirty technology* are responsible for the disruption of the global environment.² It predicted better management of the world's environment will produce more renewable resources from the land and sea. It predicted technological innovation will improve efficiency in the use and reuse of energy and materials, and reduce pollution. Arguing there will be no resource shortages or pollution buildup, the Report claimed the way clear for indefinite economic expansion, if only Business and governments co-operate to take the necessary measures to sustain development.³

The Left doubts the last part of the "sustainable growth" formula. As long as the world is organized to have the money of the world's investors make the most money there can be little hope of an equitable distribution of the world's wealth and few measures to meet the ecological crisis. "Wiser" resource management requires harvesting practices and restrictions on yield which will raise the price of renewable resources. "Cleaner technology" will require massive new investments, most of which will not increase 'productivity'. These measures are

1. World Commission on Environment and Development, (The Brundtland Commission) 1987. *Our Common Future*. Oxford: Oxford University Press.

2. *Ibid.*, p.8.

3. *Ibid.*, p.8.

hardly compatible with the global scramble by the multinationals for cheaper labour, cheaper resources and lower environmental standards in which we find ourselves.

Greens doubt the first part of the Brundtland formula, the ability to sustain economic expansion and so grow our way out of Third World poverty (while increasing the wealth of the North). Regardless of the social and economic system under which we organize ourselves, they insist, there are ecological limits to the scale and kinds of economic activities in which humans can engage. Given the spiraling levels of ecological degradation, the future must be worked out within the need to reduce, not increase, the size of the global economy.

Our freedom of action, and thus our moral choices, can only be discerned by first resolving the technical arguments underlying the "limits to growth" debate, and then dealing with the question of equity amongst humans within what level of economic activity can be sustained by the Earth.

Fortunately the proponents of "sustainable growth" and of the "limits to growth" agree, on a great deal. Firstly, they define the "environment" in the same way, as the *biosphere*, an unfathomably complex network of living plant and animal communities, called habitats, and the non-living cycles of the air, water and land which connect and sustain them.⁴ However exceptional we may be as moral actors, biologically humans are but one species in this system.

Secondly, they agree our dependence on the biosphere for economic activity is twofold. We depend for key areas of production on "renewable resources," i.e., on air, water, plants, animals, and energy which are produced and reproduced only by the normal operations of the biosphere. And we rely on the biosphere's operations to naturally "recycle" biodegradable wastes back into the natural constituents of the biosphere, while harmlessly disposing of the toxic materials we drew out of the Earth's crust or created in our factories.

4. D.A. Chant, *Pollution Probe*. Toronto: New Press, 1972, pp. 2-7; R.F. Dasmann, *Planet in Peril: Man and the Biosphere Today*. New York: World Publishing Times Mirror, 1972, pp. 39-90; B. Commoner, *The Closing Circle: Nature, Man and Technology*. New York: Bantam Books Inc., 1971, pp. 11-44.

Thirdly, they agree "environmental problems" are not simply a long list of unrelated eyesores or threats to human health. They are human disruptions of natural habitats and the ocean, air and land cycles of the biosphere.⁵ As habitats are poisoned by pollution, crippled by overharvesting, or simply wiped out to accommodate urban and industrial expansion, the ability of habitats to reproduce "renewable" resources and process wastes is impaired or destroyed. Environmental degradation reduces the production of *potentially* renewable resources and shrinks the natural waste reprocessing capacity of the biosphere.

Where the proponents of "sustainable growth" and "limits to growth" disagree is on whether or not technological innovation and resource management can prevent the spiral toward ecological exhaustion in a growing economy. Will efforts to "get more from less," "cleaner technology" and "wiser" resource management hold our degradation of the biosphere in check as production rises?

In order to sustain economic growth for a period of time one must engage in a properly balanced combination of the following six sets of activities or tasks:

1. Somehow get more materials and energy from the biosphere, the Sun and the Earth's crust without increasing the disruption of the biosphere in the course of these increased resource extraction measures;
2. Somehow get more useful work from a given flow of energy and similarly waste less materials in the production process;
3. Somehow produce more durable products (which need to be replaced less often) and make them easier to reuse, rebuild, and recycle;
4. Somehow produce products with less wastes, with no wastes that cannot be recycled or returned safely to the biosphere, and with wastes that are easiest to reuse or recycle;

5. P.D. Raskin and S.S. Bernow, "Ecology and Marxism: Are Red and Green Complementary?" *Rethinking Marxism*, Vol. 4 1 (Spring 1991): 87; and H.E. Daly and J.B. Cobb Jr., *For the Common Good: Redirecting the Economy Towards Community, the Environment and a Sustainable Future*, Boston: Beacon Press, 1989: 1-2; T. Benton, "Marxism and Natural Limits: An Ecological Critique and Reconstructionism." *New Left Review* 178, 1989: p. 74.

- 5) Somehow reuse more waste energy, recycle more industrial waste, and recycle thrown away or junked products, without increasing energy and material use in the process; and
- 6) Somehow dispose of wastes in the biosphere in forms, locations and quantities that can be returned to the natural flow of such materials and energy without further disruption of the habitats and cycles of the biosphere.

To continue economic growth indefinitely this entire range of measures has to continue on a coordinated and indefinite basis. Otherwise, economic expansion requires more ecological demand⁶ and one quickly runs into limitations on production arising from the inability of the Earth to supply rising ecological demand.

Unfortunately, technological innovation is not magic. Magic is what is required to accomplish what our six tasks require: to conjure up ever more product from the same amount of materials, ever more effort from the same quantity of energy, ever more renewable resources from the Earth, ever less wastes from industrial processes, and wastes ever more integrated into the natural flows of energy and materials in the biosphere.

Technology's manipulations of natural processes are, in fact, doubly constrained – by the efficiency of our devices and processes, on one hand, and by the characteristics of the natural processes with which we are intruding, on the other.

Tasks 2–5 represent efforts at “getting ever more from less” in all areas of production. Unfortunately, the efficiency of our devices and processes are not indefinitely improvable. The efficiency of all our devices and processes is restricted, in the last analysis by the laws of thermodynamics.⁷

6. Editors of *The Ecologist: A Blueprint for Survival* Harmondsworth: Penguin Books, 1972: pp. 16–18.

7. See N. Georgescu-Roegen, “The Entropy Law and the Economic Problem” and “Selections from ‘Energy and Economic Myths.’” In *Economics, Ecology, Ethics: Essays Towards a Steady - State Economy*. ed. H.E. Daly. New York, Anchor Books, 1980.

These well established principles tell us there is a limit to how much of a flow of energy can be tapped and turned into useful effort for our purposes. Similarly, there are limits to the efficiency of our use of materials. All technologies run out of possibilities for improvement. In practice our machines, devices and industrial processes seldom approach anything like their theoretical limits of efficiency because of the exponentially increasing cost of developing and utilizing what are only marginally more efficient processes and machinery.

Nor can we plan on the supposition that new forces of Nature are awaiting discovery and exploitation to answer our problems. Even if new forces of Nature are discovered, greater efforts made possible by new forces would eventually peter out from the inherent inefficiencies of our means to harness them. Improvement in all 6 tasks have to be synchronized and coordinated to keep ecological demand within the envelope of the biosphere's capacity to sustain. Big leaps forward in capacity in one area, energy production for instance, would be no help if matching gains were not made in the other areas of technological innovation.

Indeed, "technological optimists" do not seem to have seriously considered the ecological consequences of trying to harness any as-yet-undiscovered natural forces. In the wake of our unhappy dalliance with nuclear fission, we must ask the ecological consequences of trying to harness natural process that may someday be found. Harnessing new and more fundamental forces of Nature is likely to produce more, not less, intrusion into the processes of the biosphere and thus more problems, not solutions to existing ones. There is no technological *deus ex machina* to save us from the limits of ecological demand which the biosphere of our planet can provide.

To consider tasks 1 and 6 is to examine the constraints on our economic activities arising from the characteristics of the biosphere with which our ecological demand interferes.

Task 1 represents various forms of trying to induce the goose to lay more and more golden eggs. Unfortunately, neither natural habitats, nor the artificial habitats of agriculture, silviculture and aquaculture can be successfully driven to greater and greater levels

of production. Natural habitats collapse from overharvesting. 'Cultured' habitats pushed for greater yields soon become dependent on larger and larger quantities of fertilizers, pesticides and other inputs to produce lower and lower yields. The economic activities of society are parasitic upon the natural processes of the biosphere. Plants and animals consumed by the economy, and all the materials and energy in the air, water and soil cycles appropriated by the economy, are being pulled out of their role in the normal operations of the biosphere. We depend on the natural operations of the biosphere which our massive appropriation of renewable resources impairs. As in any parasitic behaviour, too much appropriation from the host so interferes with its processes that it cannot maintain itself.

With regard to the supply of non - renewable resources from the Earth's crust, the extraction of materials from the Earth often destroys overlying habitats and is associated with massive pollution of the biosphere in mining and refining. We therefore cannot reasonably expect to provide ourselves a growing supply of them either, without increasing environmental disruption.

Task 6 represents the requirement that, if economic growth is to continue indefinitely, wastes from our economic activities must become increasingly compatible in volume, location and composition with the natural flows of energy and materials to which they are added. Unfortunately, problems arise here as well. It will be a task of exponentially increasing difficulty to more and more closely match biodegradable wastes with the natural flows of materials in the biosphere. But more difficult still to solve is the basic problem that the wastes produced by many modern industries - notably nuclear power, the petrochemical industry, and the metal industries - are simply incompatible with the health of living things. Task 6 requires that industries whose technologies which cannot be made compatible at any scale with the environment's ability to handle their wastes be shed entirely from the inventory of society's productive forces. In some cases it may be possible to operate some hazardous technologies on a small scale, by operating effective closed-cycle production systems, recycling and toxic-waste destruction measures in combination, if damage caused by inevitable releases will not bioaccumulate. But there is no way to operate hazardous processes in a way that would allow the ever greater scale of their use.

Measures to reduce production's ecological damage to the biosphere – such as pollution controls, improved energy efficiency, extensive recycling of resources, the production of durable goods, aggressive restoration of renewable resources, etc. – can reduce the degradation of the biosphere at a given level of production, but only to a certain degree. Or they can increase production for a time with fixed volumes of materials, energy and waste disposal capacity. But there can be no sustaining of economic growth indefinitely into the future. We do face uncircumventable ecological constraints on human economic activity.

How close are we to exceeding Earth's capacity to supply our ecological demand? Our ecological constraints are much more liable to be narrow rather than to be wide. Given that it takes some twenty years for the full consequences of an insult to the environment to work its way through the biosphere and show its full effects, current spiralling levels of environmental disruption are compelling evidence that present levels of ecological demand are already considerably larger than can be sustained. And it is wishful thinking to believe even the best efforts of a determined society could reduce our demand on the environment per unit of production enough to sustain current levels of production. The world economy will have to contract to create an ecologically sustainable society. This creates clear ethical problems as we face the ecological bill for the past 500 years of European expansion.

Reductions in the gross scale of the global economy will probably have to be large and substantial. Trainer estimates that the North will have to reduce its per capita level of production by 80% to give the people of developing countries sufficient access to their own resources (now flowing to the North) and sufficient pollution room to attain a low but decent standard to living.⁸ Strenuous efforts at increased efficiency, pollution control, and use of the most Green technologies may stretch the allowable size of the global economy to a somewhat larger proportion of the current level.

What standards of living can be supported for the population in such an economy? That depends crucially on the distribution of wealth in the North and in the South.

8. F.E. Trainer, *Abandon Influence*. London, Zed Books, 1985, p. 266.

The ethical and political challenges of the decline of the economic pie are not hard to imagine. Early in the awakening to our situation, some Northern conservatives were suggesting the need for "lifeboat ethics," for rich countries to secure their access to Third World resources and restrict the growth of Third World pollution by force or persuasion, as required.

The *minimum* ethical requirement seems quite clear. Before any segment of global society can live in luxury everyone must live in sufficiency. Within the limits which may constrain everyone equally, we must insure that all of humanity have the basic human needs and public services which make for a full and fulfilling life. Personally, I would go farther toward equality of condition. The temptation for conservatives will be to embrace a greater and greater measure of social inequality both in the North and in the South, repressive political solutions to dissent and poverty, and pseudo-Darwinian programmes such as "lifeboat ethics,"⁹

This kind of discussion obviously leads to the question of the ethical choices we must face in supporting or opposing the social system which has created the ecological crisis in the first place, and which is keeping us locked on the course to ecological exhaustion. What is regarded as ethical behaviour is usually judged with respect to societal standards established by the most powerful minorities in the society. We can hardly expect to escape this problem in discussion of economic equity within ecological constraints.

Acquisitive "instincts" or inherent tendencies to overpopulation cannot be held responsible for our ecological crisis. Humans have been around for hundreds of thousands of years without causing the kind of devastation we have in the last few hundred, and without having the rapidly expanding population we have seen over the same period. Our situation also cannot be reduced to individual sin. Greed has been around as a possible personal obsession for a long time. And it takes a lot advertising to make most people constantly dissatisfied enough to feel the 'need' to "shop till they drop." We have to ask why in our contemporary global society this obsession has become so pervasive, a Great Virtue rather than a Deadly Sin, in spite of the fact it doesn't make our lives much happier.

9. M. Ryle, *Ecology and Socialism*. London, Radius Books, 1988.

Sociologists believe that the way a society is organized creates the situations to which individuals and groups must respond. This society is organized around an endeavour in which everyone and everything must be bent to allow those with accumulations of money to turn money into more money. We are used to thinking of economic activity as the product of human labour, both mental and physical. It is also the conversion of Nature into goods and wastes. In order that money be turned into more money, there must constantly be new investment opportunities. Production must expand: more 'resources' must be turned into products, products which all eventually end up as wastes. In order that money be turned into more money more of the environment must be treated as a 'resource' and made into pollution. Inevitably, such a society grows in the scale and complexity of production until its renewable resource consumption and pollution overwhelm the capacity of Nature to support it, unless people call a halt to the madness first.

This society continues on the path to ecological disaster, in spite of growing awareness of the problem and its causes, because a very small social minority, the "Business community" of both the North and South, demands it. It is, after all, their goal to turn money into ever more money. Ethical reflection must inevitably come to the question whether or not we can morally support such a system. We have sacrificed an enormous amount to the myth of Progress. It has rationalized suicidal destruction of the living world that sustains us, as well as legitimized enormous exploitation and brutality amongst humanity. It is now clear the effort to sustain material Progress cannot deliver on its promises of endless wealth, power and happiness. The progressive phase of capitalism, the period when its inequities and injustice might be defended by arguing it is developing the human capacity to live more fully in the world in the long run, is now clearly spent. We must confront the reality that improvement in the human condition can now only come through change in the social arrangements between people, both within particular countries and between North and South. Those concerned with economic equity must face the task of changing the distribution of wealth and power, not dream of circumventing the issue by creating more wealth. We can no longer hope to solve poverty and want through general economic expansion "trickling down" from the overdeveloped to underdeveloped countries, or from the rich to the poor within countries.

There is an additional reason why rapid global social change is imperative. If we change global society before we undermine the ecological basis for a reasonable standard of living, we can, within the limits of ecological constraints, maintain much of the economic achievements of the last two hundred years. The more we hesitate to move toward an ecologically sustainable economy, the less will be Earth's productive capacity when we bow to the inevitable. Perhaps the largest ethical problem we face is responding creatively to the fact that we can see coming the end of the world as we know it, whether we welcome it or not.

References

- Benton, T. 1989. "Marxism and Natural Limits: An Ecological Critique and Reconstruction". *New Left Review* 178: 51-86.
- Chant, D.A. 1972. *Pollution Probe*. Toronto: New Press.
- Clow, M. 1982. "Alienation from Nature: Marx and Environmental Politics". *Alternatives*. (Summer): 36-40.
- Clow, M. 1986. "Marxism and the 'Environmental Question': An Assessment of Bahro". *Studies in Political Economy*. 20 (Summer): 171-186.
- Clow, M. 1992. "Ecological Exhaustion and the Crisis of Global Capitalism". *Our Generation*. Vol. 23 1: 1-25.
- Commoner, B. 1971. *The Closing Circle: Nature, Man and Technology*. New York: Bantam Books Inc.
- Daly, H.E. and Cobb, J.B. Jr. 1989. *For the Common Good: Redirecting the Economy Towards Community, the Environment and a Sustainable Future*. Boston: Beacon Press.
- Dasmann, R.F. 1972. *Planet in Peril: Man and the Biosphere Today*. New York: World Publishing *Times Mirror*.
- Editors of *The Ecologist*. 1972. *A Blueprint for Survival*. Harmondsworth: Penguin Books.

- Georgescu-Roegen, N. 1980. "The Entropy Law and the Economic Problem" and "Selections from 'Energy and Economic Myths'". In *Economics, Ecology, Ethics: Essays Towards a Steady-State Economy*. ed. H.E. Daly, 49-60 and 61-81. New York: Anchor Books.
- Raskin, P.D. and Bernow, S.S. 1991. "Ecology and Marxism: Are Red and Green Complementary?". *Rethinking Marxism*. Vol. 4 1 (Spring 1991): 87-103.
- Ryle, M. 1988. *Ecology and Socialism*. London: Radius Books.
- Trainer, F.E. 1985. *Abandon Affluence*. London: Zed Books.
- World Commission on Environment and Development, WCED, (The Brundtland Commission) 1987. *Our Common Future*. Oxford: Oxford University Press.