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## 16 Environmental ethics for tomorrow

### Sustaining the biosphere

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#### **Sustainability**

What do we want for tomorrow? What ought we to want? Sustainability!! But of course! "Sustaining" is rather similar to "surviving," and nobody can be against it. The basic principle of people living on landscapes is that past and present continue into the future. But what are you for? Some answers are quite inclusive: All living things ought to be sustained, equally people and nature, and these two go together. "Sustainable development," Ronald Engel tells us, with emphasis, "may be defined as *the kind of human activity that nourishes and perpetuates the historical fulfillment of the whole community of life on Earth*" (Engel 1990, 10-11). Such answers are both generous and nonspecific, giving little guidance for ethics or policy.

Proponents argue that sustainability is useful just because it is a wide-angle lens. The specifics are unspecified, giving peoples and nations the freedom and responsibility of self-development (although the UN has further suggested some indicators of sustainable development, United Nations Department of Economic and Social Affairs 2007). This is an orienting concept that is at once directed and encompassing, a coalition-level policy that sets aspirations and thresholds, and allows pluralist strategies for their accomplishment. Work your development out however you wish - provided only that it is sustainable into the future.

Critics reply that sustainability has proved to be an umbrella concept so diffuse that it requires little but superficial agreement, bringing a constant illusion of consensus, glossing over deeper problems with a rhetorically engaging word. The French philosopher Luc Ferry complains: "I know that this term is obligatory, but I find it also absurd, or rather so vague that it says nothing." The term is trivial by a proof of contradiction: "who would like to be a proponent of an 'unsustainable development'! Of course no one! . . . The term is more charming than meaningful" (Ferry 2007, 76).

So can we be more specific about what we want to sustain?

**Sustainable development**

The favored answer for the two decades since the United Nations Conference on Environmental and Development has been "sustainable development." "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations World Commission on Environment and Development 1987, 43). "Sustainable" coupled with "development" expects continued growth but not such as degrades opportunities for the future. So defined, sustainability could apply to social institutions (colleges, banks, churches, populations, cultures) as well as environments. But UNCED intended it to apply to agriculture, forestry, water use, pollution levels, industry, resource extraction, urbanization, national environmental policies and strategies.

Over 150 nations have endorsed sustainable development. The World Business Council on Sustainable Development (WBCSD) includes 130 of the world's largest corporations. The duty seems unanimous, plain, and urgent. Only so can this good life continue. In some cases, development is short-range; we mine the resource (oil, coal), exhaust it, close up shop there and move elsewhere. But in the long-term, no one wants unsustainable development.

Still, economy is here prioritized, and anything can be done to the environment, so long as the continuing development of the economy is not jeopardized thereby. The environment is kept in orbit with economics at the center. One ought to develop (since that increases wealth and social welfare), and the environment will constrain that development if and only if a degrading environment might undermine ongoing development. The underlying conviction is that the trajectory of the industrial, technological, commercial world is generally right – only the developers in their enthusiasm have hitherto failed to recognize environmental constraints.

When economics is the driver, we will seek maximum harvests, using pesticides and herbicides on land, a bioindustrial model, pushing for bigger and more efficient agriculture, so long as this is sustainable. This will push to the limits the environmental constraints of dangerous pesticide and herbicide levels on land and in water, surface and ground water, favoring monocultures, typically of annuals, inviting soil erosion and invasive species. The model is extractive, and largely dependent on commodification of the land. Land and resources are "natural capital." Yes, the result of this model has sometimes been pollutants, toxic soils and water, loss of wildlife or recreational opportunities. So we will have to be more careful. But that is no reason to abandon the model, only reason to make it sustainable.

**Sustainable growth**

We need economic growth that we can sustain indefinitely. Economists can hardly speak without hoping for growth, fearing business slowdown and stagnation. For most economists, planning for degrowth is about as

irrational as planning to fail. Facing the future, there must be growth, and it has got to be sustainable. Ecologists had often been talking about "carrying capacity," and some had been warning that there are "limits to growth" (Meadows 1972). A few prophetic economists were advocating "steady-state economics" (Daly 1973). But neither in the First or Third Worlds did developers wish to hear about limits or steady states, so they immediately and enthusiastically accepted "sustainable development," which meant for them "sustainable growth."

The idea has become a mantra in ongoing consultations, a phrase heard around the world. The United Nations 2005 *World Summit Outcome* refers to the "three components of sustainable development - economic development, social development, and environmental protection - as interdependent and mutually reinforcing pillars" (United Nations World Summit 2005, 12). A frequent worry has been that the developed countries can welcome long-term planning for sustainability, but the developing countries have to face more immediate needs, whether or not they can see beyond the next harvest. Indeed, third-world nations may argue that, far from developing, the rich need to shrink so that the poor can grow. Meanwhile, the general orienting vision seems to be one of ongoing and increasing prosperity that is widely shared and long-term.

The sustainability debate has been forcing societies to consider how they need to manage three types of resources (economists may call them forms of "capital"): economic, social, and natural. Planners have to ask which of their resources have substitutes and which do not. We might replace coal-fired energy plants with wind and solar energy, but it is quite unlikely we can find substitutes to essential ecosystem services, such as the water in rivers and groundwater, or the oxygen provided by forests. Many natural resources produce multiple benefits. Forests provide paper. Perhaps we can go paperless. But forests also maintain biodiversity, provide water downstream, and absorb carbon dioxide. Can we do without forests? Perhaps no amount of money in the bank (economic capital) is worth more than air, water, soil (natural capital).

Sustainability discussions have alerted many to what economists call "market failure," that is to goods – often quite vital ones – that markets cannot effectively price: the air we breathe, for example, or the climate that sustains us. Markets may also fail to ration effectively, or fairly, resources that are running low – such as petroleum or copper. Markets may not deal with spillover, that is, degrading systems that are not priced on the books of the sellers or buyers – as with the pollutants coming out of smokestacks and sewer lines.

The June 2012 UN Rio+20 Conference advocated "green growth," keen on growth only hoping that it could be green. The World Business Council for Sustainable Development (WBCSD) argues that business has to think in terms of eco-efficiency. "Eco-efficiency is reached by the delivery of competitively priced goods and services that satisfy human needs and bring quality

of life, while progressively reducing environmental impacts and resource intensity throughout the life cycle to a level at least in line with the earth's carrying capacity" (DeSimone and Popoff 1997, 47). These concerns have challenged the "business as usual" mentality with alarms about sustainability. Those who do business, or run a university, or run for political office will today have to endorse sustainability in some form or other – at least for public relations.

Nevertheless, the model remained growth. What we must push for, according to the Royal Society of London, the world's oldest scientific society, is "sustainable intensification" of reaping the benefits of exploiting the Earth (Royal Society, London 2009). But ethicists, familiar with the foibles of human nature, reply that when 7 billion people – increasing toward 10 or 12 in a few decades – seek sustainable exploitation of their Earth, the predictable result is environmental disaster.

Would it not be more rational to think of a future in which the goal is "right-sizing," a term now preferred by some. Again, no one can object that something needs to be the right size. But this will at once provoke debates about what is the right size, and at least it invites planners to consider that down-scaling may sometimes be as wise as up-scaling (Flipo, and Schneider 2008, 317-318).

Sustainable development was also defined in a United Nations Environment Programme report (*Caring for the Earth*) as "improving the quality of life while living within the carrying capacity of supporting ecosystems," and this has become another widely recognized core definition (IUCN/UNEP/WWF 1991, 10). That opens up further directions for consideration.

### **Sustainable opportunity**

The best development, according to Nobel Prize-winning economist Amartya Sen, is development that increases freedom. People want and deserve to enrich their opportunities to choose how they want to live, and this does require political liberties, property rights, education, health care, but it does not require increasing consumption. They may ask: Where can I get the best deal? The most money? Return on investment? But they may further ask: How can I live the most meaningful life? The most virtuous life? The richest life? Discover the most value? Enjoy the most significant and sustained community? They may rather prefer lives more richly lived on landscapes they love, which they also protect for future generations (Sen 1999).

Martha Nussbaum, collaborating with Amartya Sen, argues that what is most to be sustained and developed is human "capabilities," requiring "substantial freedoms," which include opportunity to live to old age in a healthy environment, to engage in economic transactions, to have a voice in political and social policy, to live in a just society, with redress for injustice, especially in societies where there is a wide gap between rich and poor (Nussbaum and

Sen 1993; Nussbaum 2011). What we must sustain is intergenerational equity. Just as we owe to present humans that they be treated justly, their rights respected, so we owe to future generations that they have an opportunity not less than ours.

Development is a perennial human drive. For all of human history, we have been pushing back limits. Especially in the West, we have lived with a deep-seated belief that life will get better, that one should hope for abundance and work toward obtaining it. Economists call such behavior "rational"; humans will maximize their capacity to exploit their resources. What people want is to be more and more prosperous. Moral persons will also maximize human satisfactions, at least those that support the good life, which must not just include food, health, clothing, and shelter, but more and more goods and services that people want. Such growth is always desirable.

The argument now is that there can and ought to be perpetual gains to human material well-being. What we seek is ever-enlarging opportunity, of such kind that our children and grandchildren will have as much and more of it than we do. In keeping future options as open as possible, a people on a landscape will have to make value judgments about how much original nature they have, or want, or wish to restore, and how much culturally modified nature they want, and whether it should be culturally modified this way or that.

Facing economists who insist that we must have sustainable growth, philosophers are likely to reply that economists, though they always claim to be benefitting people, do not have any moral insight built into their economic science. Economists have no special competence in evaluating what we ought to sustain, and even a thoughtful economist, such as Sen, is behaving more like a philosopher when he advocates developing our capacities for freedom and the good life. How much ought we to sacrifice the integrity of wild nature remaining on our landscapes to achieve more personal freedoms or to offset social inequities. Economists, like the ecologists, may help tell us what our options are, what will work and what will not. But there is nothing in economics per se that gives economists any authority or skills at making these further social decisions about the deeper goals of sustainability. Economics does not enable us to choose between diverse options, all of which are economically possible. In fact, because economists typically value economic growth uncritically, they may be ill-suited to make such choices.

We must have an ethics that asks about how to live justly. But the ethicists may soon find that, as did the ecologists and economists, they too have their problems: caring for persons versus caring for nature. In the West we have built development into our concept of human rights: a right to self-development, to self-realization. Today, such an egalitarian ethic scales everybody up and drives an unsustainable world. When everybody seeks their own good, there is escalating consumption. But equally, if one seeks justice and charity, when everybody seeks everybody else's good, there is, again, escalating consumption.

Is there any hope? Again, of course, people want more opportunity to develop their freedoms, their capabilities. People are attracted to appeals to a better life, to quality of life. Some progress is possible using an appeal to still more enlightened self-interest – or perhaps better: to a more inclusive and comprehensive concept of human welfare. That will get us environmental health, sustainable development, even a realization that sustainable development must depend on sustained yield from an underlying bioregional support.

### **Sustaining the Anthropocene**

Recently, this focus on developing human capabilities has become more ambitious. We have moved into a new era, the Anthropocene Epoch, and face radically new opportunities, sustaining, enlarging this new humanized epoch. Peter Kareiva and Michelle Marvier, arguing "Conservation for the People" in the *Scientific American*, dismiss the old reason that "we have an ethical obligation to save the world's biodiversity for its own sake." That should be "largely scrapped in favor of an approach that emphasizes saving ecosystems that have value to people." "Pitting nature and biodiversity against people makes little sense. Many conservationists now argue that human health and well-being should be central to conservation efforts" (Kareiva and Marvier 2007, 50-51).

Celebrating what he calls the "Planet of No Return: Human Resilience on an Artificial Earth," Erie Ellis concludes: "Most of all, we must not see the Anthropocene as a crisis, but as the beginning of a new geological epoch ripe with human-directed opportunity" (Ellis 2011, 44). He joins colleagues in the *New York Times*: "The new name is well deserved. . . . The Anthropocene does not represent the failure of environmentalism. It is the stage on which a new, more positive and forward-looking environmentalism can be built" (Marris, Kareiva, Mascaro, and Ellis 2011). The way forward for conservationists is to embrace an ever-increasing human domination of the landscape, perpetual enlargement of the bounds of the human empire. Humans are in the driver's seat. The Anthropocene is "humanity's defining moment" (Seielstad, American Geosciences Institute 2012). "Nature no longer runs the Earth. We do." We are "the God species" (Lynas 2011, 8 and title).

Allen Thompson, an environmental philosopher, has "radical hope" that humans, urged to find a significantly "diminished place for valuing naturalness," can produce a new kind of "environmental goodness ... distinct from nature's autonomy" (Thompson 2010, 43, 56). Ben Minteer urges us to undertake "the design and management of novel ecosystems that provide valued ecosystem services (e.g. carbon sequestration) yet bear little resemblance to historical landscapes." He foresees "the eclipse of venerable cultural ideas of wilderness, native species, and the autonomy of a natural world beyond our ken" (Minteer 2012).

Even in our Anthropocene enthusiasm, however, we still need to sustain ecosystem services. The Millennium Ecosystem Assessment examined 24 ecosystem services and found that 15 are being degraded or used unsustainably (Millennium Ecosystem Assessment 2005). Humans had nothing to do with the creation of the basic natural life support systems of the planet. Managing the planet, humans are not likely to wish, or be able, to reconstruct global rainfall patterns, or photosynthesis, or tropic pyramids, or genetic coding and speciation, or heterotroph-autotroph relations, or bird migrations, or what earthworms do in soils and insects do in pollinating, or any other of the basic systems that nature provides. Perhaps, taking responsibility, we can limit or repair some damages we have introduced (global warming, ocean currents, toxics, endangered species), but that we might engineer these foundational grounding systems for the better is overblown fantasy.

Those who celebrate moving into the Anthropocene Epoch, point out that, although humans probably will not reconstruct these big-scale global systems, humans are creating novel ecosystems. Novel ecosystems are composed of new combinations of species under new abiotic conditions. These critics claim that adaptive ecosystem management approaches must explicitly acknowledge the current status and predict the future conditions of these novel systems. Old styles of management, which focused on removing undesirable species or conditions from ecosystems to return them to a prior condition, are no longer sufficient. We need to consider and experiment with outcomes and trajectories previously unexperienced, rather than simply taking preventative or therapeutic measures protecting former nature (Seastedt, Hobbs, and Suding 2008). We are not trying to go back to some earlier nature but going forward beyond nature.

In this mood, the Anthropocene enthusiasts insist that in the future humans will and must manage the planet. The editors of a *Scientific American* special issue, "Managing Planet Earth," speaking with some global "we," claim that the two central questions today are: "What kind of planet do we want? What kind of planet can we get?" (Clark 1989). Nature as it once was, ecosystem integrity, with wild nature continuing, is no longer an appropriate focus. Environmental ethics for the future is about sustaining rebuilt landscapes. Most of life for most people takes place on those anthropogenic biomes that are a hybrid tapestry of nature and culture. More than 80% of all people live in densely populated rural, village, and urban landscapes (Ellis and Ramanakutty 2008). Natural systems are inextricably entwined with cultural systems, introducing new levels of complexity (Liu et al. 2011). In the Anthropocene, we need planning for a socially reconstructed, anthropogenic nature.

Much more modestly, the Anthropocene managers may prefer to speak of planetary stewardship (Sanderson et al. 2002; Folke et al. 2011; Steffen et al. 2011). Even better would be humans as trustees of Earth. Stewards are still "users," trustees are more inclusive "caretakers" of values in their

charge. Such management seeks to keep in place or to restore basic natural systems, not to rebuild them. We are quite sure that the ongoing present environment accommodates humans. We could be foolish to gamble our children's and grandchildren's lives by pushing too far away from what we know works into some new Anthropocene Epoch.

Thomas Princen advises in *Treading Softly: Paths to Ecological Order* (Princen 2010): Build an economy grounded in the way natural systems work. We should allow enough nature to remain to produce biotic integrity and health on the landscapes we inhabit. We have inherited a pro-life planet and ought to preserve it for our future, even if we are only concerned about our own flourishing. That leads less to concern for sustaining a managed planet, rebuilt for our benefit, and more to caring for, sustaining the biosphere we have inherited.

### **Sustainable biosphere**

For the long-term future, what we must sustain is this inherited biosphere. The Ecological Society of America advocates research and policy that will result in a "sustainable biosphere." "Achieving a sustainable biosphere is the single most important task facing humankind today" (Risser, Lubchenco, and Levin 1991). Jane Lubchenco, in her presidential address to the American Association for the Advancement of Science, urges us "to move toward a more sustainable biosphere – one which is ecologically sound, economically feasible, and socially just" (Lubchenco 1998). She later became chief administrator of NOAA.

The "sustainable biosphere" model gives priority to a baseline quality of natural environment. In any ethical environmental governance, the economy must be worked out "within" such a policy for environmental quality objectives (clean air, water, stable agricultural soils, attractive residential landscapes, forests, mountains, rivers, rural lands, parks, wildlands, wildlife, renewable resources). Winds blow, rains fall, rivers flow, the sun shines, photosynthesis takes place, carbon recycles all over the landscape. These processes have to be sustained. The economy must be kept within an environmental orbit. One ought to conserve nature, the ground-matrix of life. Development is desired, but even more, society must learn to live within the carrying capacity of its landscapes. The model is land as community.

"Sustainable" is an economic but also an environmental term. The fundamental flaw in "sustainable development" is that it typically sees the Earth only as resource. What if the current trajectory of the industrial, technological, commercial world is generally wrong, because it will inevitably overshoot? The economic juggernaut is coupled with a political juggernaut to push for development, growth, more and more Anthropocene geoengineering. That is always going to press the environment to a breaking point. But the environment is not some undesirable, unavoidable set of constraints. Rather, nature is the matrix of multiple values; many, even most of them, are

not counted in economic transactions. In a more inclusive accounting of what we wish to sustain, nature provides numerous other values (aesthetic experiences, biodiversity, sense of place and perspective), and these are getting left out. The Millennium Ecosystem Assessment explores this in great detail.

Yes, but economics is the overall governing driver; there is no escaping this – so economists will say. Washington and Wall Street call the shots. Decisions there are what make the world go round. Maybe, yet without air to breathe and water to drink, and ecosystem services, both Washington and Wall Street would soon be shut down. Every culture still depends on natural support systems. In fact, decisions based on the "command and control" mentality of Washington and Wall Street are more part of the problem than part of the answer.

A recent way of bridging sustainable development and a sustainable biosphere is to think of a "safe operating space for humanity." Johan Rockström and colleagues argue (using scientific data) that there are nine planetary systems on which humans depend. These can be seen by analysis of chemical pollution, climate change, ocean acidification, stratospheric ozone depletion, biogeochemical nitrogen-phosphorus cycles, global freshwater use, changing land use, biodiversity loss, and atmospheric aerosol loading. Since the Industrial Revolution, in three of these systems the boundaries have already been exceeded: biodiversity loss, climate change, and the nitrogen cycle (Rockström et al. 2009). Do we want to preserve/conservate all nine of these systems or do we want to reengineer them to suit humans better? For at least 10,000 years (since the beginning of what geologists call the Holocene epoch) these systems have remained stable. Surely the wisest course is to keep these major life support systems of Earth in place as they are.

Some will object that people cannot have allegiances to a planet – this is too grandiose a view for ordinary people. Meanwhile, people can and do care for to their regional landscapes – England, or the Adirondacks, or Pyrenees. They can have some global allegiances, for example to the Christian Church, ecumenically. They can act with collective human interests at national scales, as proved by patriots. We may prove able to work out some large-scale precautions and incentive structures. The European Union has transcended national interests with surprising consensus about environmental issues. Kofi Annan, the former Secretary-General of the United Nations, praised the Montreal Protocol to protect the ozone layer, with its five revisions, widely adopted (191 nations) and implemented as the most successful international agreement yet. There are over 150 international agreements (conventions, treaties, protocols, etc.) registered with the United Nations that deal directly with environmental problems (United Nations Environment Programme 1997; Rummel-Bulska and Osafo 1991). At that time, all the developed nations, except the United States and Australia, signed the Kyoto Protocol – even if Copenhagen failed to continue or replace that protocol.

Develop! Develop! Develop! Intensify! Intensify! Intensify! Maximize endless development? Is the future we want maximized development for human satisfaction? Perhaps when humans become more philosophical about their world, in the midst of our development, we will also seek to sustain life on this wonderland planet. People and their Earth have entwined destinies; that past truth continues in the present, and will remain a pivotal concern in the new millennium – demanding an inclusive environmental ethics.

The photographs of Earth from space have proved to be among the most meaningful ever taken. Hardly anyone sees such photographs without being moved. Our perceptions are of Earth's beauty, of its fertility, of its smallness in the abyss of space, of its light and warmth under the sun in surrounding darkness – and, above all, of its vulnerability. The virtually unanimous experience of the astronauts looking back is of being grasped, shaken, and transformed by an astonishing encounter with Earth as it truly is – in the words of Edgar Mitchell, "a sparkling blue-and-white jewel. . . laced with slowly swirling veils of white . . . like a small pearl in a thick sea of black mystery" (quoted in Kelley 1988, at photographs 42-45). "I remember so vividly," said astronaut Michael Collins, "what I saw when I looked back at my fragile home – a glistening, inviting beacon, delicate blue and white, a tiny outpost suspended in the black infinity. Earth is to be treasured and nurtured, something precious that must endure" (Collins 1980, p. 6). In this sense, the most important spinoff of the space program is to leave us earthstruck.

The bottom line, transcultural and nonnegotiable, is a sustainable biosphere. That is the ultimate expanding circle: the full Earth. The us-and-our-sustainable-resources view is not a systemic analysis of what is taking place. The planet is a self-organizing biosphere, which has produced and continues to support all the Earthbound values. True, we have Earth-views: a global village, Gaia, God's creation, ecosystem-services. Still, looking at those photographs from space, it seems incredible that we either socially construct or should artificially reconstruct the planet Earth. Earth is the source of value, and therefore value-able, able to produce value itself.

Jacques Attali, then president of the European Bank for Reconstruction and Development in London, faced the new millennium with this conclusion: "Each nation will search in its own way and according to its own traditions for a new equilibrium between order and disorder, between plentitude and poverty, between dignity and humiliation. ABOVE ALL, a new sacred covenant must be struck between man and nature so that the earth endures. . . . The . . . object that we must protect above all others is the earth itself, that precious corner of the universe where life is miraculously perched" (Attali 1991, 129-130, capitals in original).

We are Earthlings. Our integrity is inseparable from Earth integrity. The ultimate unit of moral concern is the ultimate survival unit: this wonderland biosphere.

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