

**REDIRECTING ENVIRONMENTALISM:
PEACE AND THE PROVISIONING OF SOCIETIES**

By Roy Woodbridge

When reductions in the productivity of natural systems lead to human deprivation and when competition between societies for access to scarce environmental goods and services threatens to escalate into global conflict, ecological decline becomes the enemy of all peoples.

The world is now faced with such a prospect. As the UN's Millennium Ecosystem Assessment and other reports make clear, our societies are drawing down more from nature each year than nature can regenerate. Almost all of the world's major ecosystems are suffering some degree of human-induced impairment and all are being made increasingly unstable by the inexorable progress of climate change. The inertia from continued overloading of demands on natural systems may result in catastrophic, irreversible reductions in the ability to meet human needs within the next 20 years.

Nature is drawing lines in the sand that our societies dare not cross without incurring great suffering. Nothing less than mobilizing the world's peoples on a scale as if for waging war against an implacable foe will produce the decisive action required to avoid crossing these lines.

Paradoxically, as the demands of growth are pushing us ever closer to the precipice, the environmental movement is losing momentum. In the words of the oft-quoted report prepared for

the Environmental Grantmakers Association, “Modern environmentalism, with all of its unexamined assumptions, outdated concepts and exhausted strategies, must die so that something new can live.”

Unfortunately, the solutions proposed by the authors of this report, and others - i.e. reorienting effort towards building broader coalitions and abandoning a focus on technology - are misguided. The environmental movement is not failing because its messages are narrowly conceived: it is ineffective because its messages have been diluted.

Environmentalism has not been well-served by its embrace of sustainable development through the balancing of environmental, social and economic interests. This once-dynamic proposition has lost its focus. It is now so permeated with different forms of political correctness and fractured into so many sub-issues and varying interpretations that it defies encapsulation in an intelligible sense of purpose or direction. The more the movement becomes trapped in the mantra of sustainable development the more it is condemned to operate on the periphery of global growth processes.

In sharp contrast to the mixed messages and waning influence of environmentalism, the global agenda is mesmerized by the compelling clarity of “economic correctness” and the virtuous circle of growth. Growth, the theory says, together with democratic systems of governance and open, transparent arrangements for encouraging trade and foreign investment will eventually produce a “virtuous circle” of wealth creation that will facilitate social advance and environmental protection.

This powerful theory is based on more than 300 years of experimentation with economic principles, and it seems to be working. International trade is expanding. Growth is chugging along quite nicely. Several hundred million people have been raised above the poverty line in recent decades and integration into the global economy offers a beacon of hope for vast majority of humankind seeking a better life for themselves and their families. Moreover, the rise in global affluence appears to be producing a peace dividend as witnessed by the general decline of war between nations and the total absence of all-out military conflict between advanced economies in the period since the Second World War. Why, the theory argues, do you need to go to war when national ambition can be satisfied through trade and economic growth?

Not surprisingly, the theory offers a comfortable resting place for the world's political leaders, particularly when no coherent alternatives are being presented to help them address the pressing needs of their citizens.

Yet, "economic correctness" is also fatally flawed. It works well for those able to tap into ecological abundance. However, in conditions of abundant people and scarce environmental resources the "virtuous circle of growth" can quickly be transformed into vicious circles of recurring poverty and escalating human conflict.

Despite impressive gains, the directions of technological innovation and economic competition appear to be pushing us towards a bi-polar world in which the economic gaps within and between countries are widening. Nor has much progress been made in reducing the 3 billion-

strong under-half of the world's people that live on less the \$2 per day and that consume about 1/20th the natural capital of citizens in advanced economies.

The huge disconnect being created between the demands of growth and the capacity of natural systems to meet them is of even greater significance. This is the "Achilles Heel" of continued economic and social progress. Together with inequity, it presages a dangerous future.

In just 20 years the global economy is expected to be at least 2 or 3 times its present size. This growth must be provisioned from already stressed natural systems. If the world's poor are to have a better life their transition must be provisioned. We must also meet the provisioning needs of the almost 2 billion additional people that will join us by then. Within this short space of time, if economic growth is to continue and we are to address global poverty, we will have to create access, each year, to the ecological equivalent of 3 or 4 earths.

This provisioning challenge dwarfs all other risks to human progress and world peace. The loss of ecosystem viability implied by these burgeoning human demands will soon starve growth processes and plunge the world into violent competition for access to increasingly scarce natural capital on a degraded planet - competition that could pit the world's rich against the poor.

Evidence of a tendency towards such conflict can be found in the nature and persistence of sub-national confrontations, many of which appear to be little more than cold-blooded contests for control of land and resources. It can be found in the growing ranks of ecological migrants whose livelihoods have been disrupted by local or regional environmental constraints. (This is not just a

Third World phenomenon associated with things like food scarcity, desertification, the loss of agricultural land and water shortages. Ecological migrants also abound in advanced economies as resource depletion empties fishing, logging and mining communities and agricultural lands are taken out of production.) And it can be seen in the rising competition between advanced and rapidly emerging economies for access to essential natural resources, including wild fish, forest resources, water, strategic minerals and oil and gas.

To avoid a generalized descent into chaos, the global growth dynamic must be redirected to deal with the implications of eroding ecosystems for the ability of the world's peoples to meet their provisioning needs. The environmental movement must be redirected to the task of shaping this new agenda and devising the mechanisms of peaceful provisioning.

To be effective, environmentalists must concentrate their efforts on levers of change that can make a difference in time frames that matter. The options for doing this are limited. Unlike earlier societies, people cannot escape the consequences of ecological decline by migrating en masse to more favoured locations. We can resort to trade to gain privileged access to scarce resources, but these actions cannot increase the availability of ecosystem goods and services. Nor can we realistically hope to make adequate progress through respectful dialogue aimed at changing the personal values of the world's people to a conservationist ethic.

Ultimately, there is only one viable option for peacefully meeting the world's provisioning needs. We have to reorganize our societies around new technologies and management practices that give us the power to massively expand our ability to use natural capital.

The potential to do this is huge. However, to exploit these opportunities we have to change the direction of present economic and technological advance. The figure below illustrates why. It contrasts the dominant thrust of current technology development priorities with the some of the key innovations required to meet provisioning needs.

THE INNOVATION DIVIDE*

Present Innovation Priorities	Innovation for Meeting Provisioning Needs
<ol style="list-style-type: none"> 1. Increased Computer Speed and Capacity 2. Communications and Internet Functionality 3. Software, Artificial Intelligence, Smart Machines 4. Nanotechnologies 5. The Human Genome and Medical Technologies 6. Chemicals, Aerospace, New Materials 7. Basic Science: integrated theory of physics 8. Space and Military Technologies 	<ol style="list-style-type: none"> 1. Integrated Bio-region Management 2. Comprehensive Agricultural Management 3. Sustainable Energy and Transportation Systems 4. Industrial Ecology 5. Eco-Urban Management 6. Monitoring and Preparedness

*These are not watertight compartments (e.g. overlap occurs in the application of computer and communications technologies to environmental management). However, technology is only helpful to provisioning goals if it is specifically directed to this purpose.

Old technologies and New Economy innovation are shaping present patterns of economic advance and providing the ever-changing market opportunities around which nation states compete for growth and jobs. These fields commandeer most global investment in technology development and are driven largely by opportunistic, short-term market considerations.

We must break this pattern by shifting effort from the pursuit of randomly-generated technology for corporate and national advantage to the international pursuit of directed innovation to meet the global provisioning challenge. As a minimum, this new agenda involves:

- creating the capacity for societies to organize their demands on natural systems within the framework of integrated bio-region management strategies (This is the starting point for reshaping the human interface with natural systems.);
- transforming global agriculture in ways that integrate productivity gains with dramatic reductions in agriculture's use of fossil fuels and water and that cut pollution and the sector's contribution to climate change (At present, agriculture accounts for roughly 70% of human appropriations of water and 25% of anthropogenic green-house gasses. Modern agricultural practices produce enormous amounts of pollution and are totally dependent on the use of vast amounts of fossil fuels - 2 quarts of oil are consumed in North America to produce 2 pounds of breakfast cereal!);
- developing and using the diverse technologies and management practices of industrial ecology based on energy efficiency, closed loop production and life cycle materials

management systems and the creation of market mediation mechanisms for excess waste products (The range of technologies required is vast. Serious progress may require the international harmonization of investment incentives for such innovation.);

- introducing the technologies and practices of Eco-Urban Management that will transform entire cities, like industry, into closed loop processors of natural capital (Again, significant new technologies are needed. Progress will not be made unless driven by a vision of a desirable urban future.);
- redesigning our cities to become vastly more efficient users of natural capital by creating denser populations that live and work in “green buildings” concentrated around stops on mass transit lines (Materials and energy intensities in high density housing can be up to 2.5 times lower than low density developments. Green buildings can cut annual energy and water use by another 30-50%. Mass transit can further reduce fossil fuel use.)
- establishing a global R&D program to develop “green” energy technologies that wean nation states from dependence on carbon-based forms of energy use (This is partly envisioned by the Kyoto Accord. The era of peak oil adds to the urgency.), and
- giving societies the capacity to respond to signs of ecological stress and systemic changes in the operation of natural systems by developing enhanced regional and global monitoring, forecasting and preparedness technologies.

The scope of these innovation requirements and related social adaptation is daunting. The time available for redirecting innovation effort is ominously short. The processes of change must be implemented around the world. Thus meaningful progress requires that all nations mobilize around the development and deployment of these technologies on a scale and with the same intensity as if for war.

We must all choose, and choose quickly, whether to fight our neighbours for access to eroding pockets of natural capital or unite in common cause on the battlefields of innovation to equitably provision the people's of the world.

“Provisioning and Peace” must become the international rallying cry of a highly focussed, revitalized environmental movement.

Roy Woodbridge is a Vancouver-based, international business development consultant and the author of *The Next World War: Tribes, Cities, Nations and Ecological Decline* published by The University of Toronto Press, from which this article is adapted. (www.thenextworldwar.com)