



# What Mother Nature Will Soon Be Charging Your Business

BY DAVID BRAND AND RADHA KUPPALLI, NEW FORESTS

The earth is a living system. The planet's atmosphere, water and land teem with life and these living systems regulate each other. More importantly to humans, these living systems provide us a range of "ecosystem services," such as regulation of the composition of the atmosphere; purification and cycling of water; the basis for agriculture, fisheries and forestry; and protection from storms, floods, diseases and toxic substances.

When human society was smaller, the world's economy did not have the ability to affect these living systems on a global scale. Past societies, such as the Maya or the Easter Islanders, may have caused some localized damage to forests, soils and freshwater systems. However, as Jared Diamond has pointed out in his recent book *Collapse*, as human society has ballooned, we have globalized pressure on ecosystems through our use of land, water and the atmosphere.

It appears the world has already reached a tipping point where ecosystems and the services that they provide are quickly eroding. The World Wildlife Fund's 2004 Living Planet Report notes that we already use about 1.3 times the carrying capacity of the earth, and that the vitality and resilience of the planet's natural systems has declined by 40 percent between 1970 and 2000. With regard to global warming, humans have increased global atmospheric carbon dioxide concentrations by 35 percent since the Industrial Revolution. The Millennium Ecosystem Assessment concluded that approximately 60 percent of ecosystem services are being used unsustainably or are in decline.

Given the trajectory of the global economy, the degradation

of ecosystems will continue if left unchecked. The GDP of the United States is approximately US\$12 trillion, and the Gross World Product is approximately US\$56 trillion dollars. With the world economy growing at approximately 3 percent a year, global economic activity will double in 25 years. At this rate, the global economy will grow by almost 20 times over in 100 years.

## New Pricing Signals and Opportunities

What does this mean for your business?

All this means that if we are to maintain economic growth, the global economy must and will change to emphasize ecosystem conservation and even ecosystem rehabilitation. In practice, this means that the relative costs of various inputs to production will change and ecosystem services will become commercially valued. Ecosystems and ecosystem services are currently not priced, and therefore we use them wastefully. For example, we allow the conversion of tropical rainforest — the provider of carbon sequestration, biodiversity and water regulation — to agricultural uses, such as growing soybeans for animal feed or producing palm oil. If human society wants to conserve ecosystem services, then the services they provide must be priced.

Price signals cut both ways. Those businesses that use ecosystem services as an input will pay a higher price for those inputs, spurring new forms of technology and efficiency efforts. We already see a rapidly rising price for the right to emit carbon dioxide into the atmosphere and this trend will diversify to other environmental factors and ecosystem services. For example, we can expect higher prices for fresh water and a concomitant rise in payments to land



managers for watershed management to protect the value of water assets.

The use of habitat banks, endangered species credits, coastal protection banks, biodiversity offsets and tradable development rights will expand. If your business uses water, develops land, causes greenhouse gas emissions or otherwise produces impacts on ecosystems, expect to see a range of new cost inputs for these impacts. New price signals will put ecosystem services on the balance sheet as both credits and debits. If your business manages water or waste, provides technologies that can reduce greenhouse emissions or repair ecosystems, expect to be busy creating and managing new assets.

In such a world, companies must ask: What would be your *real* bottom-line look in an ecosystem-constrained future?

### The Early Days

Price signals for ecosystems will not develop overnight and the introduction of pricing mechanisms and payment schemes will occur in fits and starts. They will likely start regionally and then slowly expand globally, much like the current carbon market. However, pricing ecosystems and their services is unavoidable if we wish to maintain a functioning planetary biosphere that supports all life.

It is easy to put this issue into the management basket of "important but not urgent." However, a few easy questions help identify your position in the face of this trend and may just help your business to prosper. In a world where ecosystem services will increasingly have price tags associated with them, ask:

**What are my business liabilities?** What eco-

system impacts are associated with my supply chain, the services and products I produce and the use of my products and services by consumers? Knowing the impacts is a first step to understanding future liability, and it makes sense to start thinking now about what alternatives are available to re-invent your products and services to operate effectively in an ecosystem-constrained world.

**What are my business assets?** Do you own land that provides valuable ecosystem services? Can you develop technologies that can reduce ecosystem impacts, offer services that can increase efficiency of resource use or manage recycling? You may have an unexploited asset and should consider ways to push for commercialization of the ecosystem benefits that you are providing.

**How would I rethink my business model in a world of ecosystem markets?** Look at business re-invention as redefining your business in an ecosystem-constrained world. For example, if you are a coal company, think about your business as encompassing carbon management, land rehabilitation and even biomass energy business lines. If you are in agribusiness, think about managing ecosystems as a joint commercial business with raising crops. If you are a property developer, seek to develop strategic partnerships with habitat banking firms.

By answering these questions, great companies will identify the trends that will affect and frame their future opportunities. ■

*David Brand, Ph.D., is the Managing Director and Founder of New Forests Pty Ltd. Radha Kuppalli is New Forests' Manager, Business Development. New Forests (www.newforests.com.au) is an international ecosystem asset management and advisory firm based in Sydney, Australia.*

## BSR Report "Environmental Markets: Opportunities and Risks for Business"

Want to learn more about ecosystem services? BSR has published an Environmental Markets Trends Report. To download a copy of "Environmental Markets: Opportunities and Risks for Business," go to [www.bsr.org](http://www.bsr.org).

BSR has also convened a number of multi-sector dialogues among policy makers, researchers, market brokers and companies—including Shell, Abbott, PG&E and Brown-Forman—and administered a survey of companies like BP, Chevron, Unilever, McDonald's and Rio Tinto in order to understand what tools and resources managers most need to leverage environmental market opportunities. Their feedback helped us to design this initiative, together with our partners at Ecosystem Marketplace, Stanford University, the United Nations Environment Programme and the U.S. Environmental Protection Agency.

*If your company is interested in participating in and supporting this initiative, please contact Emma Stewart, Ph.D., BSR Acting Research Director, at 415-984-3248 or [estewart@bsr.org](mailto:estewart@bsr.org).*

### BSR Conference Session: From Carbon to Water to Biodiversity: Business Opportunities in Emerging Environmental Markets

*This session will explore the risks posed by the decline in environmental services to a company's bottom line, as well as the new opportunities arising from "environmental markets."*