



Ecosystem Services

Framing a Corporate Action Plan

Ecosystem services are worth trillions of dollars annually, but around the globe they are being threatened and lost. This is creating risks and opportunities for business. Companies need to understand the relationship between ecosystem services and their own strategies and begin to develop plans to mitigate risk and seize opportunity. In recent years several groups have created tools for corporations to understand and address ecosystem services issues and some leading companies have been working on such issues. This white paper provides a rapid overview of some key topics in corporate ecosystem services to help focus initial company efforts and orient detailed corporate action plans.

Key Questions

- What types of risk and opportunities do ecosystem services present to companies?
- How should companies mobilize to mitigate risks and capitalize on opportunities?
- What expert resources are available?

Key Finding

Ecosystem services present important risks to many companies, but an excessive focus on risks may leave opportunities unexplored. Taking a broad perspective and engaging the right stakeholders early can help surface opportunities for long-term strategic advantage. Companies must develop the insight and skill to manage ecosystem dependencies as well as impacts.

Ecosystem Services Present Risks and Opportunities

Many corporations are facing risks and opportunities of which they are unaware. The source of these risks and opportunities? Ecosystem services. Food, fiber, biomass, fresh water, erosion control, pollination and even recreation—these are some of the services provided by nature that corporations may impact or depend on. Typical risks associated with

Research Topics

- Corporate Sustainability
- Ecosystem Services

November 2011

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ecosystem services include supply chain disruption, pricing volatility, regulatory fines, and changing consumer choices. Many of the risks related to ecosystem services may not be readily obvious to managers because ecosystem services have traditionally been treated as free public goods. Growing government and consumer interest in ecosystem services heightens reputational and regulatory risks for companies especially in the areas of deforestation, climate change, water scarcity, soil depletion, invasive species, biodiversity loss, and increasing chemicals in the environment.

At the same time, ecosystem services may present opportunities to companies, including the potential to reduce costs, influence regulations, burnish brands and expand markets. Companies often overlook opportunities surrounding ecosystem services, or avoid them due to their complexity. Companies that can move up the ecosystem services learning curve ahead of their competitors may be able to secure sustainable competitive advantage.

Turning Risks into Opportunities

Most ecosystem services risks can be turned into opportunities. For example, a looming regulatory risk, if taken head-on, can put a company in a position of knowledge and ultimately leadership around the issue, allowing the company to prepare for and often help determine future regulations. Similarly for issues such as water supply, the risk of supply interruptions and price fluctuations can be turned to a competitive advantage if a company works with the stakeholders in the supplying watershed to improve long term availability. This can create goodwill in the community, enhance corporate reputations, and even create new business opportunities. IBM, for example, began addressing internal water usage issues and now has an entire service practice providing support to companies and governments on water related initiatives.

Ecosystem Dependencies May Present Greater Challenges than Impacts

Ecosystem services issues may take the form of impacts or dependencies, with dependencies often presenting greater challenges. By definition, impacts on ecosystem services reduce an ecosystem's ability to continue to provide the service in the future. Ecosystem service impacts—by other names (toxic waste, clear cutting, CO₂ emissions)—are familiar to most managers, are often regulated, and can be addressed through a range of actions currently being undertaken or explored by many companies. For example:

- Greening the supply chain



- Designing out impacts
- Increasing resource efficiency
- Investing in offsets and impact mitigation
- Encouraging users to modify behaviors to reduce downstream impacts.

Ecosystem service dependencies have a different character. Dependencies exist when a company's operation requires ongoing ecosystem service functionality. For instance, almost all businesses are dependent on access to clean water. Ecosystem service dependencies are commonly found in the food, fiber and beverage industries and often in a context of minimal regulation. Although sometimes ecosystem services can be replaced by mechanical solutions (hand pollination in vanilla, for instance) or substitutes (aquaculture as a replacement for ocean fisheries) there remain many services for which healthy functioning natural or lightly managed ecosystems are the most cost effective or are necessary. If these dependencies are not managed well, they can put a business at risk by causing supply disruptions, altering cost structures, and reducing brand value.

Managing dependence may require nontraditional skills, resources and approaches. The complexity of maintaining natural ecosystem service function and the fact that most of these services are provided outside the direct control of the company (even timberland owners are susceptible to invasive insects) requires companies to do three things:

1. Involve outside stakeholders—decisions and actions require collaboration
2. Identify and engage key expertise—non-governmental organizations (NGOs), universities, consultants
3. Manage with humility—ecosystems are complex and require nuanced approaches.

Ecosystem services can present issues of various types, including operational, regulatory, reputational, market and product and financing issues. What follows is a representative list of issues that can be raised by ecosystem services, examples of the how those issues affected companies and what the company response was.

Operational Issues Can Present themselves as Existential Threats

Managing operational issues requires understanding and tracking ecosystem service trends and their direct and indirect causes, as well as identifying



potential tipping points that could create discontinuities in service or product availability and price. For companies with tight operating margins that are sensitive to raw materials prices, operational issues should be addressed carefully.

Water has emerged as an operational issue for some companies. Coca-Cola, for instance, has acknowledged that its goal of doubling revenues in 10 years is not possible under the business-as-usual scenario and has identified water supply as a key challenge. As a result, it has adopted the long-term vision to “work to safely return to nature and communities an amount of water equivalent to what we use in our beverages and their production.”¹ The company’s specific goal by 2013 is to “assess the vulnerabilities of the quality and quantity of water sources for each of our bottling plants and implement a source water protection plan.”² By taking an active role in water management issues, Coca-Cola is developing critical expertise, providing enormous value to its 900 franchised bottling plants, and seeking to manage reputational issues by taking a leadership position.

Staking out a Leadership Position Can turn Regulatory Issues into Opportunities

Regulations regarding ecosystem services are rapidly changing across the globe. Managing regulatory ecosystem service issues effectively requires getting ahead of changing regulations. Staying aware of regulatory issues lowers the risk of financial penalties or costly retrofitting, can facilitate awareness of new market opportunities and allows a company to influence the future regulatory environment.

One example of successful cross-sector collaboration on a regulatory issue can be seen in the work of the Roundtable on Sustainable Biofuels (RSB³). The RSB certification standards for sustainable biofuels were established through a consultative multi-stakeholder process. The European Union has a requirement that by 2020, 10 percent of total energy consumption must come from biofuels. After significant concern about how this directive was creating an unsustainable push for biofuel production, the European Union in 2011 required that only certified sustainable biofuels would be accepted under this directive. The RSB standards were one of only seven certification schemes allowed.⁴ The companies on the RSB, such as Kousol (a joint venture of Repsol) and Manildra, benefit from this expanding market

¹ http://www.thecoca-colacompany.com/citizenship/water_main.html

² *ibid*

³ <http://rsb.epfl.ch/page-24898.html>

⁴ <http://www.ens-newswire.com/ens/jul2011/2011-07-22-01.html>



because as they helped to craft the certification standards, they were able to adapt their practices to meet the certification in advance of competitors. They also benefit on a reputational level from collaborating with the highly visible NGOs participating in the RSB.

Reputational Issues Often Seen in Combination with Other Issues

Reputational issues have been a key driver for concern over ecosystem services. A growing awareness of the importance of operational and market issues together with increasing natural resource constraints have raised the profile of these other issues. As such, reputational issues are most often observed, and should be managed, in combination with operational, regulatory or market issues.

In 2010, for instance, Greenpeace U.K. launched a powerful, disturbing video associating Nestlé with the killing of orangutans due to Nestlé's use of palm oil in "Kit Kat" bars. Following the viral dissemination of the video on YouTube and Nestlé's lobbying for removal of the video for copyright infringement, Nestlé's Facebook page was the center of thousands of critiques during which the PR disaster worsened.⁵ By mid May 2010, Nestlé had announced a partnership with The Forest Trust (TFT) —a U.K.-based NGO—to help implement a new "zero deforestation" policy through the establishment of rigorous supplier certification. By February, 2011, Indonesia's largest palm oil supplier had agreed to work under the new criteria and avoid destroying high quality tropical forests.⁶ The Forest Trust is working with a range of stakeholders, including Greenpeace, to monitor compliance.

Markets and Product Issues Are an Opportunity to Innovate

Ecosystem services issues surrounding markets and products present the most interesting areas of innovation and long term competitive advantage. Consumers are increasingly showing interest in product attributes related to ecosystem services. This emerging consumer consciousness coupled with increasing resource constraints can drive benefits from "eco" product and service innovation. As well, emerging markets for ecosystem services are being developed across the globe and early movers gain a knowledge advantage.

Unilever developed a new brand in their Lipton® tea line called PureLeaf™ where at least 50 percent of the tea in this product is Rainforest Alliance Certified™. This "bundled" certification follows the Sustainable Agriculture Network standards covering the following principles⁷:

1. Social and environmental management
2. Ecosystem conservation
3. Wildlife protection
4. Water conservation
5. Workers' rights and well-being
6. Occupational health and safety
7. Community relations
8. Integrated crop management

⁵ http://news.cnet.com/8301-13577_3-20000805-36.html?tag=mncol;txt

⁶ <http://www.tft-forests.org/pages/?p=6065>

⁷ <http://sanstandards.org/sitio/subsections/display/7>

9. Soil management and conservation
10. Integrated waste management

Using such a comprehensive standard, Unilever is managing most of the ecosystem services issues associated with this product and is well positioned to capture the emerging market for ecological and ethical products. This market category, often described as LOHAS (lifestyles of health and sustainability), has been growing globally. At least 65 percent of consumers in North America, Europe and Japan state that they care about the environment; at least 15 percent are willing to pay 20 percent more for environmentally sustainable products.⁸

Type of Issue, Examples and Responses

Figure 1 Issue Types, Risks, Opportunities and Teams to Involve

Type	Risk	Opportunity	Internal Teams to Involve
Operational	Increased costs Disrupted supply	Cost savings, improved efficiency	Manufacturing, Supply chain, R&D
Regulatory	Fines, fees, license to operate	Engagement with policy makers	Legal, compliance
Reputational	Negative PR	Leadership, brand equity	Marketing, public affairs
Market / Product	Market-shutout	New products and services	Marketing, R&D
Financial⁹	Investor requirements	New financing sources	Finance, Investor Relations

When a company faces an ecosystem service issue dominated by risks, it must convene an internal team that includes legal, compliance, financial, public relations, and other communications staff. When opportunities predominate, on the other hand, key internal team members might include representatives from the research and development, marketing and operations functions. Involving representatives from a broad range of functional areas early can reduce the possibility of missing key issues. Once a general approach for dealing with the issue has been selected, a small group should be charged with driving the company's response. A next step should be to seek external collaborators.

Connect with Relevant Experts and Resources

To address ecosystem services issues effectively, companies should generally engage with outside experts and stakeholders including consultants, industry roundtables, NGOs and governments. To identify the right resources, consider the following categories of expertise:

- Internal experts such as current environmental, health and safety (EH&S) specialists, corporate responsibility officers, operations managers, product developers.
- Outside experts such as specialized consultants, scientists from universities or research institutes, individuals working for NGOs or advocacy groups, public relations and communication firms. Key research groups in this area include: Stanford's [Natural Capital Project](#), Business for Social Responsibility's [Ecosystem Service Working Group](#), [University of Vermont](#) and Forest

⁸ Slightly higher willingness to pay in Europe, Canada and Japan. Data from 2009. <http://www.lohas.com/sites/default/files/lohasconsumers.pdf>

⁹ Financial risks and opportunities are listed in the CESR but are not treated here. For more information see the United Nations Environment Program Finance Initiative, www.unepfi.org.

Trends' [Ecosystem Marketplace](#). The World Resources Institute maintains a database of ecosystem service specialists at <http://projects.wri.org/ecosystems/experts/>.

- NGOs that are specialized in the ecosystem service or area of interest. Where the issues are focused on a specific local ecosystem, there may be several local NGOs with whom to engage. Some leading NGOs working with corporations on ecosystem service issues include: [World Resources Institute](#), [World Wildlife Fund](#), [The Nature Conservancy](#), the [World Business Council for Sustainable Development](#) and others.
- Citizens and community groups who are specific stakeholders in the ecosystems in question. There are various methods for stakeholder identification and engagement. The involvement of experts will minimize risk in this complex aspect of ecosystem services management.
- Relevant authorities or regulatory bodies with jurisdiction over the ecosystem service to assure a comprehensive understanding of current local regulations and market based opportunities. For example, for water quality issues in the United States, the Environmental Protection Agency (EPA) is a good starting point but states establish the specific regulations.
- Industry roundtables and other companies that address the specific ecosystem service issues are an excellent source of information and collaboration. As many of these issues are very complex, benchmarking may be the only rapid indication of what is expected of companies in various industries and locations.

Organizations Involved with Corporate Ecosystem Services

Figure 2 Examples of NGOs and Industry Groups

Ecosystem Service	Relevant NGOs	Industry Groups / Partnerships
Forests	Forest Trends, The Forest Trust, Forest Stewardship Council, Global Forest Watch, World Resources Institute (WRI), most large environmental NGOs (ENGOs)	Sustainable Forestry Initiative, United Nations Forum on Forests
Fisheries	World Wildlife Fund (WWF), Wildlife Conservation Society (WCS), Marine Stewardship Council, Environmental Defense Fund, Greenpeace, UN Food and Agriculture Organization (FAO).	Marine Fish Conservation Network
Coastal and Marine	Marine Ecosystem Services (MARES), Katomba Group, WWF, FAO	Local or regional groups
Water Supply and Quality	Local NGOs, WWF, WRI, The Chesapeake Fund, The Freshwater Trust, World Conservation Union (IUCN), Bonneville Environmental Foundation, large environmental NGOs	Water Futures Partnership; Global Water Challenge; UN Global Compact's CEO Water Mandate; Carbon Disclosure Project's Water Disclosure; World Economic Forum's Water Initiative; Willamette Partnership
Biodiversity	WCS, CI, WWF, United Nations Development Program (UNDP), United Nations Environment Program (UNEP), IUCN, Fauna and Flora International (FFI), BBOP, the Natural Value Initiative,	UN Convention on Biological Diversity (CBD), Business and Biodiversity Offsets Program (BBOP), Green Development Mechanism

Agriculture	Rainforest Alliance, Slow Money, FAO, Conservation International, Technoserve	Field to Market: The Keystone Alliance for Sustainable Agriculture, National Sustainable Agriculture Coalition (USA).
Climate/ Carbon	Climate Disclosure Project, Forest Trends, Ecosystem Marketplace, The Carbon Trust, Natural Resources Defense Council (NRDC)	World Business Council on Sustainable Development, Carbon War Room, UN Framework Convention on Climate Change
Biofuel	WWF, Conservation International, WRI, NRDC	Roundtable on Sustainable Biofuel
Soya	WWF, The Nature Conservancy	Roundtable on Responsible Soy
Palm Oil	WWF, Friends of the Earth, Greenpeace, The Forest Trust	Roundtable on Sustainable Palm Oil
Recreation	Sustainable Travel International, Rainforest Alliance	The International Ecotourism Society, Global Sustainable Tourism Council

How Green Research Can Help

A number of tools are available to help your company better understand its relationship with ecosystem services. A rapid ecosystem services assessment can provide a snapshot of your key issues. A Corporate Ecosystem Services Review (CESR) offers a comprehensive assessment of major risks and opportunities. Corporate Ecosystem Valuation and Ecosystem Services Benchmarking can guide you towards establishing an ecosystem service action plan. Please contact Green Research for more information.

Recommended Reading

The Corporate Ecosystem Services Review: Guidelines for Identifying Business Risks and Opportunities Arising from Ecosystem Change. World Resources Institute, 2008, ISBN 978-1-56973-679-1

Guide to Corporate Ecosystem Valuation: A framework for improving corporate decision-making. World Business Council for Sustainable Development, 2011, ISBN: 978-3-940388-71-1

Future Expectations of Corporate Environmental Performance: Emerging Ecosystem Services Tools and Applications, BSR's Environmental Services, Tools, & Markets Working Group, March 2010

New Business Decision-Making Aids in an Era of Complexity, Scrutiny, and Uncertainty: Tools for Identifying, Assessing, and Valuing Ecosystem Services, BSR's Ecosystem Services, Tools & Markets Working Group, May 2011

The Ecosystem Services Benchmark. A guidance document. Grigg, A., Cullen, Z., Foxall, J., Crosbie, L., Jamison, L. and Brito, R. (2009). Fauna & Flora International, United Nations Environment Programme Finance Initiative, and Fundação Getulio Vargas.

TEEB – The Economics of Ecosystems and Biodiversity, Report for Business - Executive Summary 2010