Business and Ecosystems

Markets for Ecosystem Services – New Challenges and Opportunities for Business and the Environment

A Perspective

World Business Council for Sustainable Development

IUCN
The World Conservation Union

Introduction

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This briefing paper outlines the potential for mobilizing business and markets to conserve nature. It argues that market mechanisms can be a powerful complement to existing strategies for conserving ecosystems, if used in the right way.[1]

The paper is intended for both the business and conservation communities, in an effort to establish a shared vision of market-based approaches to nature conservation. It builds on current scientific research underlining the economic value of ecosystems, as well as recent inter-governmental decisions to enlist the private sector in conservation efforts.[2]

The Millennium Ecosystem Assessment (MA) assessed the global status and trends of 24 critical ecosystem services, including "provisioning" services, such as the supply of freshwater, biomass fuel, food and fibers, as well as "cultural", "regulating" and "supporting" services that underpin human well-being.[3] The MA concludes that some two-thirds of the world's ecosystem services are degraded or being used unsustainably, while also noting that demand for ecosystem services is rising, fuelled by population growth and economic development.

The natural wealth of biological diversity ("biodiversity") includes the myriad species, complex ecosystems and constantly evolving genetic structure of living resources. Conserving biodiversity is central to sustaining ecosystems and the services they provide (Figure 1).

A growing body of research documents how biodiversity increases productivity in different sectors, enhances people's enjoyment of nature, reduces ecological and associated health risks, and improves resilience in the face of shocks.[4] At a fundamental level, all economies and businesses depend directly or indirectly on the conservation of biodiversity and the sustainable supply of ecosystem services.

Biodiversity loss and ecosystem degradation thus have profound effects on people all over the world. The decline in provisioning services such as freshwater and fiber directly affects the livelihoods of communities that rely on natural resources for subsistence and cash income, while the loss of or changes in the quality or timing of regulating services, such as natural flood defenses and pest control, can leave millions of people at increased risk of disaster.

Ecosystem degradation affects businesses that rely on natural resources for raw materials, waste assimilation or indirect support for production processes. Loss of ecosystem services can also undermine a healthy workforce. Consumers ultimately shoulder the burden in the form of higher costs of goods and services, higher insurance premiums, or higher taxes to cope with natural disasters.

Conserving ecosystems and sustaining the services they provide is a pre-requisite for prosperity. Environmentalists have long argued this. Business, governments and society at large are catching up. All stakeholders have a role in efforts to sustain ecosystem services. The conservation community has knowledge of ecosystems and methods of effective management. Business can bring capital, research and technology, sophisticated production and distribution capacities. Government can define standards and develop enabling policies. The general public needs to support the process as a whole.

> "The degradation of ecosystems and the services they provide … destroys business value and limits future growth opportunities."
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> World Business Council for Sustainable Development, 2005

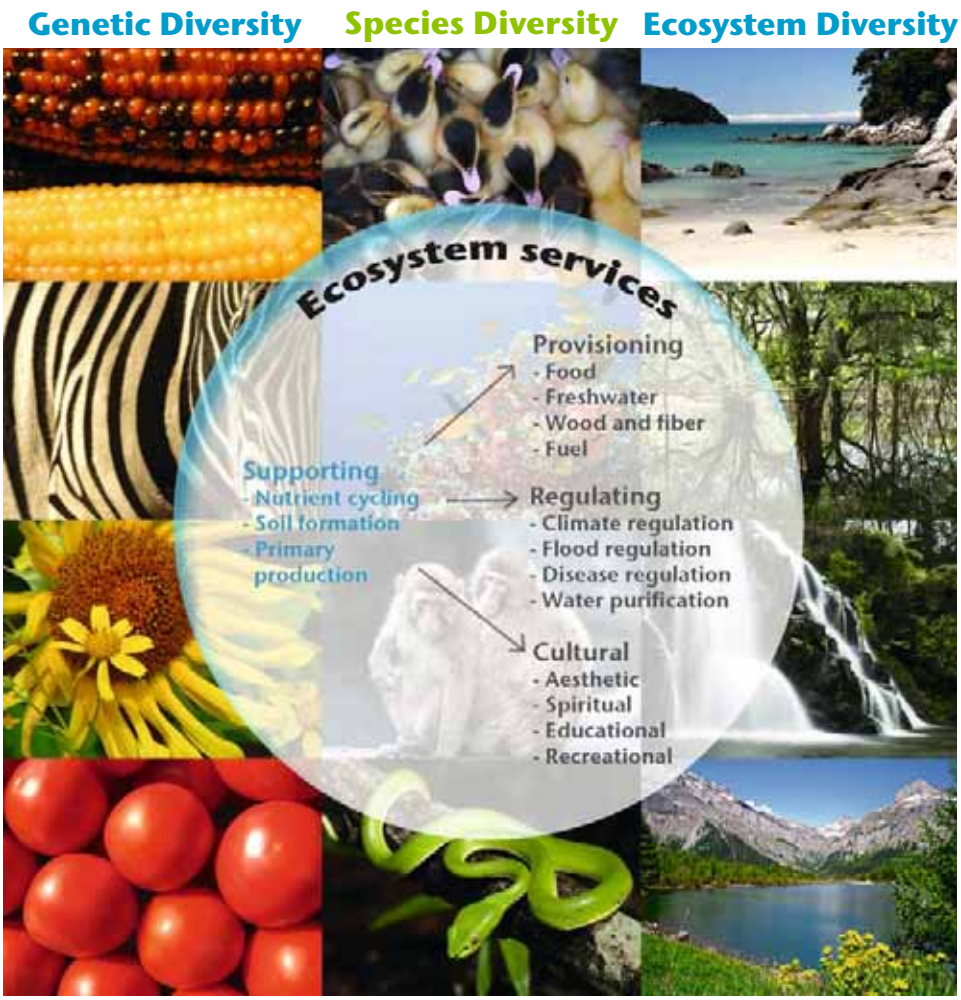


Figure 1: The diversity of life (biodiversity) underpins the supply of all ecosystem services

Ecosystem services are everywhere

Ecosystem services underpin markets everywhere; this simple fact is the foundation of many new eco-enterprises. Markets for biodiversity or for ecosystem services may sound unusual, but in fact they are already a reality.

Nature-based tourism is perhaps the best-known example of how private enterprise depends directly on the health of surrounding ecosystems. The owners and managers of eco-tourism ventures need little persuasion to invest in the conservation and sustainable management of natural resources that form the basis of their business. Even nature-based tourism captures only part of the total demand for conservation; surveys indicate that people are willing to pay for wildlife in foreign countries they have no intention of visiting.[5]

The drivers of business investment in ecosystems include: legal requirements and tax incentives; rising expectations from investors, customers, shareholders, local communities and/or NGOs; securing long-term license to operate; and helping to shape and prepare for future environmental regulations.

The **NamibRand Nature Reserve** [6] in Namibia is in many ways a model ecotourism venture. The reserve was set up to provide critical habitat for populations of Oryx antelopes and mountain Zebras. It covers 175,000 hectares and is owned by an association of nine landowners and investors.

This association has granted five exclusive concessions to tourist operators. They organize tourist visits and in return pay 10-15% of their gross income to the owners of the reserve. The tourism operators are bound by a strict code of practice. Although the landowners initially subsidized the reserve, today it is self-financing.

The creation of this private reserve has resulted in the preservation of a unique desert ecosystem, the restocking of the area with Cheetah, and the removal of 1,500 km of commercial farm fences to allow free migration of Oryx. The outstanding reputation of the reserve and its economic success have attracted some of the country's most experienced game rangers.

A major factor in the emergence of eco-enterprises and markets for ecosystem services is the growing environmental concern among more affluent consumers who increasingly insist on products and services that are demonstrably sustainable. Demand for organic food and certified sustainably harvested timber, for example, has been growing at double-digit rates in recent years[7] and is often outpacing growth in conventional, uncertified products in the same sectors. While even eco-products and services can cause environmental damage, their growing market share demonstrates that the need to balance consumption and conservation is on the minds of consumers everywhere.

More and more businesses realize that good profits can be earned from sound ecosystem management. A first step for many leading companies is to distinguish themselves from competitors and curry favor with consumers by supporting environmental causes. This includes reporting business impacts on ecosystems or contributions to conservation activities, or subscribing to voluntary schemes that certify business compliance with certain performance standards.

Such initiatives are just a start. Experience around the world suggests that maintaining, restoring or enhancing ecosystem services is a growing business opportunity.[8] New business models are being developed to deliver environmental benefits, including many intangible but valuable ecosystem services, such as water filtration, erosion control and coastal protection that can no longer be taken for granted. Far-sighted business leaders see opportunities in ecosystem markets and are investing in them. Ultimately, however, only those companies that demonstrate significant improvement in ecosystem outcomes, supported by independent verification, deserve the title of eco-enterprise.

Why make markets for ecosystem services?

The market is a powerful institution and the basis of much of the dramatic improvement in human well-being that has occurred in recent generations. However, market-based economic growth has passed many people by. At the same time, it remains a major driver of ecosystem degradation, as natural resources are consumed and waste is generated.

Seen in this light, several reasons to mobilize markets to conserve biodiversity and provide ecosystem services can be identified: first, to capitalize on the strengths of business and the sheer power of markets; second, to address existing weaknesses in markets that have resulted in widespread degradation and loss of ecosystem services; and third, in some cases, to help improve livelihood opportunities in impoverished rural landscapes. Making the best of these opportunities requires a dramatic change in the way we think about business and the environment.

Many companies spend a great deal on reducing environmental damage, both in response to legal requirements and on a voluntary basis. However, so long as environmentally harmful activities are less costly or more profitable than friendly ones, people and companies will be tempted to take advantage of this fact or make only token contributions to environmental protection, while continuing to devote most of their effort to "business-as-usual". Some companies believe they can wait until more stringent regulations come into force without suffering a loss of business value. However, the pace of change in consumer expectations and market preference makes this an increasingly unsafe assumption.

Governments and many NGOs also expend considerable effort on monitoring and responding to the environmental impacts of business. This is an essential and unavoidable role but one that can be made much easier if incentives for good environmental performance are aligned with the business bottom line.

Taxes, charity and regulation all have their place in the conservation tool kit. At the same time, there is growing interest in complementary, market-based approaches that make sustainability profitable in its own right. Evidence from around the world suggests that market-based instruments can achieve some environmental objectives at lower economic cost than conventional approaches, such as uniform pollution standards or technology mandates.[9] Other advantages of market-based approaches include greater flexibility and innovation, more sensitivity to consumer preferences, better access to investment capital, and reduced enforcement costs due to alignment between private and public interests.

Market-based approaches to ecosystem management are not just of interest to businesses and environmentalists. Such approaches can also contribute to other goals, notably the reduction of poverty and inequality in developing countries.[10] The logic is simple: increasing numbers of ecosystem service users live in urban areas. They need water, energy, food and fiber, recreation and other goods and services from nature. Meanwhile, the supply of ecosystem services generally comes from rural areas. On average, and especially in the developing world, urban residents are better off than rural communities. The development of markets for ecosystem services can therefore help to address the economic disparity between urban and rural populations. Similarly, at an international level, ecosystem markets can increase the value added of exports from developing countries to developed economies and thus boost transfers from richer to poorer.

Special efforts may be required, however, to ensure that ecosystem markets do not adversely affect the poor by reducing rural employment or restricting access to essential natural resources. Furthermore, to the extent that the poor are users of ecosystem services, they may be adversely affected by reforms that increase the cost of such services or of the products derived from them.

Perhaps the greatest challenge to enlisting markets in ecosystem conservation is the conviction that certain ecosystem services are or should remain freely available to all, provided by government, and beyond the reach of market forces. If scarce resources are not managed by the market, of course, then other solutions must be found or the resources in question are liable to disappear. Both business and environmentalists have a responsibility to help find effective and socially acceptable solutions for managing ecosystems in the face of increasing demands.

How to develop markets for ecosystem services

Growing awareness of the limitations of conventional approaches to ecosystem management has led to a search for new ways to align private and public interests. This can be seen as part of wider efforts to enlist the private sector in the provision of a range of public goods (e.g., health, education, infrastructure, etc.) through public-private partnerships and the use of economic incentives.

The challenge for business, governments, NGOs and consumers is to accelerate the transition from ecosystem management as purely a business cost (i.e., mitigation of risks and adverse impacts), or as a non-profit charitable activity, to developing the supply of ecosystem services as profitable business opportunities.

Three main approaches are available:

- Direct payments: Creating incentives for resource managers to supply ecosystem services;
- Tradable permits: Using the market to manage environmental liabilities;
- Certification: Helping consumers and investors make informed choices.

Within each of these three approaches one can further distinguish between initiatives that focus on promoting eco-friendly production systems for existing goods and services (e.g., ecotourism); encouraging the private sector to conserve particular habitats, species or genotypes associated with a range of ecosystem services (e.g., wetland mitigation), and mechanisms that treat specific ecosystem services as a commodity (e.g., carbon sequestration). More examples are provided in the following diagram.

Figure 2: Alternative market mechanisms for ecosystem services

Direct Payments

Creating incentives for resource managers to supply ecosystem services

Business and governments are increasingly aware of the importance of ecosystem services provided by private land users to secure production systems, amenity values and, in some cases, entire economies. This has led to various initiatives to encourage private land users to maintain or enhance the ecosystem services they supply.

Governments in several countries have developed subsidies and tax incentives to encourage resource conservation. In the United States, for example, income tax relief on charitable contributions has motivated donations of land or "development rights" (also known as "easements") to private environmental trusts around the country, thereby protecting over 810,000 hectares.[11] Similar tax incentives are currently used in Europe and some developing countries.

A more direct approach that has been successfully implemented in several countries involves payments for the delivery of specific ecosystem services or, more commonly, payments for maintaining or adopting land uses that are thought to provide such ecosystem services. One of the most widespread examples of this approach is payment for watershed protection. This is based on the growing awareness among water users that conserving natural forests in watersheds and reducing pollutant loads in run-off from upland areas can be a cost-effective means of providing reliable supplies of clean water for hydroelectric power generation, irrigation, industrial, domestic and recreational uses.

Under such schemes, central governments or private water users make payments for watershed protection to landowners, environmental agencies and/or conservation NGOs. Industry has played a leading role in several cases, both as a beneficiary and a buyer of watershed protection services.

In northeastern France, **Nestlé Waters** concluded a private agreement with local farmers to protect the mineral water source from nutrient run-off and pesticide residues generated by intensive farming activities. The company purchased some agricultural land and reforested it. The company also signed long-term contracts with the local farmers to adopt farming practices that reduce nitrate pollution. Nestlé financed the conversion costs and paid US$ 230 per hectare per year to compensate farmers for reduced profitability. In return, Nestlé secured a supply of high-quality mineral drinking water for its operations.

Experience suggests that payments for watershed protection are most appropriate when buying the resource outright is too expensive (and unnecessary); mitigation is less expensive than alternative technical fixes (e.g., water filtration); provision of the desired service is verifiable and enforceable; transaction costs are not prohibitive; and someone is willing to pay the price.[12]

Tradable permits

Using the market to manage environmental liabilities

A very powerful, market-based approach to ecosystem management involves creating new rights or liabilities for the use of natural resources, and then allowing business to trade them. Such an approach can significantly reduce the public cost of protecting the environment and/or maximize the value of resource use.

Perhaps the best-known example of tradable environmental rights is that of carbon credits based on government-allocated emission allowances and/or the purchase of voluntary carbon offsets by both organizations and individuals. The global carbon trade was worth over US$ 30 billion in 2006 and is expected to grow substantially in the future.[13]

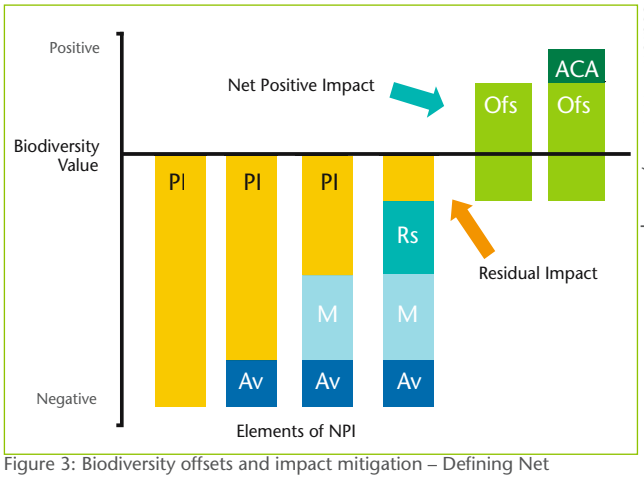
Similar approaches have been developed for the conservation of natural habitats (see "Biodiversity offsets" box) and for some ecosystem services. Examples include the emergence of wetland banking in the US,[14] trade in forest conservation obligations in Brazil,[15] and markets for ground-water salinity credits in Australia.[16] What all of these initiatives have in common is the possibility of trade, i.e., buying and selling environmental obligations to meet government mandates or voluntary aspirations.

Biodiversity offsets are conservation activities intended to compensate for the residual, unavoidable harm to biodiversity caused by many development projects.[17] One of the most well-established systems of biodiversity offsets is wetland mitigation and conservation banking[18] in the United States. Here, federal and state laws require "no net loss" of wetlands and the conservation of habitat for endangered species. Regulations require both public and private developers to compensate for or "mitigate" the loss of natural habitat, when adverse impacts are considered unavoidable, by financing the creation, restoration and/or protection of comparable habitat. The logic of biodiversity offsets is that similar or, in some cases, superior ecosystem function (i.e., services) can be provided off-site.

"Bringing conservation groups and business together to deliver concrete biodiversity outcomes through the market is both an opportunity and a challenge."

Building Biodiversity Business, 2007

Long-term prospects for tradable ecosystem services may eventually include international trade in conservation credits, similar to the market for carbon credits.[19] Unlike CO_2, however, many ecosystem services are not homogeneous or global in scope. While international trade in ecosystem credits may be a distant prospect, there are many opportunities to support the development of tradable rights as a new business sector at local, national and corporate levels. Even where government does not require compensation for the loss of ecosystem services, some companies and agencies are cooperating to establish offsets on a voluntary basis.[20] Such initiatives could be encouraged more widely, with a focus on companies in land-using sectors, e.g., agriculture and forestry, oil and gas, road construction, utilities, mining, etc.



Source: Anstee et al, in Preparation.

Figure 3: Biodiversity offsets and impact mitigation – Defining Net Positive Impact (NPI) in Rio Tinto

Key:

Predicted Impact	Unmitigated impacts of an operation with no environmental management
Avoidance	Planning or design change that avoids future negative impact e.g., relocating infrastructure
Mitigation	Action that reduces the severity of the impact e.g., buffer zones
Restoration	Action that restores biodiversity value on a previously disturbed site e.g., rehabilitation of native vegetation
Offsets	Quantifiable conservation actions taken to compensate for residual, unavoidable harm to biodiversity
Additional Conservation Actions	Actions taken by Rio Tinto at project, business and corporate levels that have led, or are predicted to lead to, positive conservation outcomes. The impacts are positive but difficult to quantify e.g., environmental education, capacity building

Rio Tinto's biodiversity strategy sets out the long-term goal of Net Positive Impact on biodiversity. This means ensuring, where possible, that Rio Tinto's actions have positive effects on biodiversity features and their values that not only balance but are broadly accepted to outweigh the inevitable negative effects of the physical disturbances and impacts associated with mining and mineral processing. They aim to achieve this by reducing impacts and implementing positive conservation measures in the form of biodiversity offsets and other conservation measures.

The figure above illustrates how a company can reduce negative biodiversity impacts through the mitigation hierarchy (avoidance, mitigation and restoration) and have a positive impact on biodiversity through the use of offsets and additional conservation actions, with the overall aim of achieving NPI as indicated by the positive value on the graph.

Certification

Helping consumers and investors make informed choices

One of the best-established market-based mechanisms for ecosystem management is the use of eco-labeling and certification schemes to distinguish products and services by their social and environmental performance. The premise of such schemes is that consumers will prefer to buy or even pay more for certified goods and services. While this is not always the case, a number of certification schemes have gained wide consumer recognition and a growing share of sales in some markets. Independent certification of environmental and social performance has proved to be a highly adaptable and powerful tool for encouraging more sustainable operations in a range of business sectors, including agriculture, forestry, fisheries, tourism and financial services. Initiatives are currently underway to extend the same principle to the carbon market, through the certification of voluntary carbon offsets.

Agriculture

Major food and agriculture companies are becoming increasingly interested in promoting more sustainable agricultural practices, partly in response to pressure groups but more fundamentally in order to protect their supply chains and consumer markets. Various labels and certification standards are used to distinguish farms that adopt food safety, environmental issues, social standards, and animal welfare, such as "bird friendly", "shade-grown", "conservation", "sustainable" and "organic".

One leading agricultural standard is GLOBALGAP (formerly known as EUREPGAP), developed by a not-for-profit partnership of retail and food service companies and their suppliers. GLOBALGAP started in 1997 as an initiative of retailers belonging to the Euro-Retailer Produce Working Group (EUREP). It subsequently evolved into a partnership of agricultural producers and their retail customers. GLOBALGAP develops standards and procedures for the certification of good agricultural practices (GAP), in order to ensure that agriculture is undertaken in a way that respects food safety, the environment, workers' rights and the welfare of animals.

Agricultural certification is well established in Europe and growing rapidly in the rest of the world, both in terms of sales volume and market share. For example, GLOBALGAP participation has grown from about 4,000 certified growers in 20 countries in 2002 to over 80,000 certified growers in over 80 countries in 2007, representing all major food retail companies in Europe.

Another well-established form of certified agriculture, especially in developed countries, is organic agriculture. A recent survey by the International Federation of Organic Agricultural Movements (IFOAM)[21] found more than 31 million hectares of farmland under organic management worldwide (or equivalent to 2.1% of total arable land, based on Food and Agriculture Organization data). The global market for organic products reached a value of US$ 33.8 (25.5 billion Euros) in 2005, with the vast majority of products consumed in North America and Europe.

Source: GLOBALGAP, 2007.

Figure 4: Global distribution of GLOBALGAP certified growers in 2006

Forestry

In the forest sector, claims about the sustainability of resource management are increasingly tested and validated through certification by independent organizations. Examples include regional and national standards developed by the Forest Stewardship Council (FSC), as well as various national standards recognized by the Programme for the Endorsement of Forest Certification Schemes (PEFC) in Europe, the US, Canada, Australia, Brazil and Chile. According to UNECE/FAO's *Forest Products Annual Market 2005–2006 Review,* about 7% (approx. 270 million hectares) of the world's forests are independently certified for sustainability.

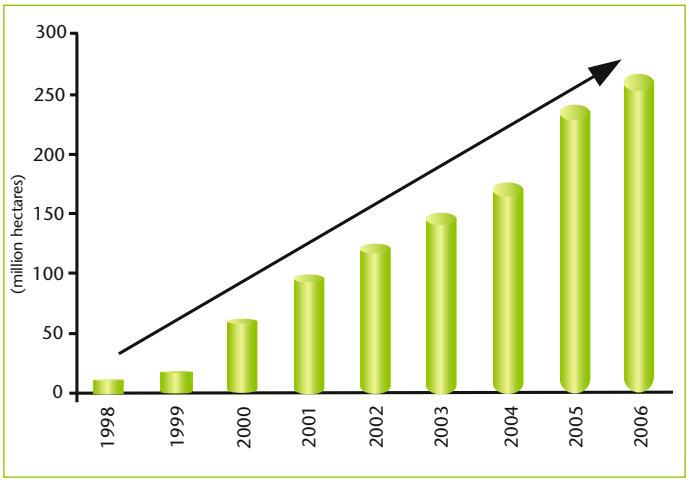


Figure 5: Certified forestry area worldwide, 1998-2006[22]

Forest certification is widespread in temperate and boreal forests in North America and in Western Europe but has been slower to take off in the tropics. Most certified forests in developing countries are found in plantations in Central and South America, with barely any certified forests in Africa. The major markets for certified timber are the UK, Germany and the Netherlands, followed by the US, Japan and France.[23]

The challenge for small-scale and developing country producers wishing to gain access to high-value markets for certified forest products lies in the significant costs of achieving higher environmental standards, as well as the costs of the certification process itself, in a market driven by increasing competition from low-cost, plantation-grown timber.

Fisheries

Many policy and management interventions have been proposed to improve the sustainability of capture fisheries. One of the most advanced market-based initiatives is the Marine Stewardship Council (MSC), which aims to reverse the decline of fish stocks, safeguard livelihoods and deliver improvements in marine conservation worldwide through the certification of fisheries. To qualify for certification, fisheries need to be committed to: maintaining and re-establishing healthy populations of targeted species; preserving ecosystem integrity; developing effective fisheries management systems that account for relevant biological, technological, economic, social, environmental and commercial aspects; and encouraging compliance with local and national laws and standards, and international understandings and agreements.

At the end of 2006, 21 fisheries were certified, more than 20 fisheries were under assessment and more than 50 fisheries were engaged in the MSC program, representing over 4 million tons of seafood (according to the Food and Agriculture Organization, global capture production in 2004 reached 95 million tons). At least 450 seafood products carried the MSC eco-label in some 25 countries, and more than 195 businesses backed the certification program. The majority of certified fisheries are currently located in developed countries, but MSC is planning to expand to several developing countries including, Papua New Guinea, Uganda, the Bahamas and Vietnam. An outstanding challenge for MSC and other certification schemes (not just in fisheries) is securing broad participation across the supply chain, from production through to retail markets.

Tourism

According to The International Ecotourism Society (TIES), traditional "sun-and-sand" tourism oriented around large resorts has matured as a market. In contrast, more "experiential" tourism, including ecotourism, nature, heritage, cultural and soft adventure tourism, is predicted to grow rapidly over the next two decades. To guide development of this rapidly growing sub-sector, the Tour Operators' Initiative for Sustainable Development is creating environmental guidelines for hotels, resorts and tourist attractions in biodiversity hotspots. Guidelines on "Sustainable Hotel Siting, Design and Construction" have been adopted by many large hotel chains and the Convention on Biological Diversity, in partnership with the tourism industry, has also developed "Guidelines on Biodiversity and Tourism Development".

Financial services

Tools similar to certification have been developed to help investors compare companies or investment portfolios in terms of their social and environmental impacts. NGOs, government agencies and an increasing number of major financial firms have worked together to raise awareness of ecosystem risks and opportunities for the investment community, to identify and share best practice, and to develop common standards for corporate environmental management and reporting. Many international banks have developed policies to reduce environmental risks, while some leading financial companies have identified biodiversity and ecosystem services as emerging issues that could significantly affect the value of their (and their customers') investments.[24]

Insight Investment – a UK fund manager – together with Fauna & Flora International – a UK-based conservation organization – jointly developed a **Biodiversity Benchmark for asset managers,** a rating tool to benchmark companies in the extractive and utility sectors with respect to biodiversity impacts, risk assessment procedures and the efforts that companies make to manage such impacts and risks.

The Biodiversity Benchmark compares companies in terms of how they manage their exposure to biodiversity risks and was used in 2004 and 2005. Feedback from companies suggests that the benchmark tool has encouraged improved biodiversity performance, strengthening the business case and providing a logical framework in both the development and audit of biodiversity management processes. Further work is currently underway to extend the benchmark tool to other sectors and countries, with support from the United Nations Environment Programme Finance Initiative.

Limits on markets for ecosystem services

While market-based mechanisms appear to work well for certain ecosystem services and in some contexts, they are no silver bullet. Experience to date suggests that the most difficult ecosystem services to bring into the marketplace are what the MA calls "regulating" and "supporting" services, such as nutrient cycling, water purification and natural pest control. These ecosystem services clearly underpin human welfare and a range of economic activities, but they can also be extremely difficult to measure and link to specific providers or beneficiaries and are highly variable across sites.

The potential of markets for ecosystem services is also limited by weak institutions and governance.[25] In many countries, property rights over natural resources are not well-defined, environmental damages are not penalized or compensated, and positive contributions to ecosystem health are not rewarded. The experience of the EU Emissions Trading Scheme for greenhouse gases clearly illustrates the importance of enabling policy in kick-starting a market, in this case by generating demand for carbon allowances. Others point to continuing gaps in international law that undermine the potential of market-based approaches (e.g., lack of consensus on access and benefit-sharing arrangements for genetic resources or how to manage biodiversity in the high seas).

A major barrier to comparing conventional and market-based approaches to ecosystem management is lack of experience with the latter. Although market-based approaches to ecosystem management have attracted significant interest from public agencies, private investors, and researchers, most ecosystem service markets are still in the early stages of development.

Key issues to consider as these markets develop include:

- Cultivating an ethic of environmental stewardship throughout the business world;
- Finding consensus on the roles and responsibilities of governments, business and other stakeholders;
- Defining environmental principles, standards and indicators appropriate for eco-enterprise and markets;
- Ensuring that markets for ecosystem services do not result in conservation for the rich at the expense of the poor;
- Monitoring and enforcing the environmental performance of business in credible ways.

Towards markets for ecosystem services

Conventional approaches to ecosystem management have sought to protect natural resources by regulating business practices and taxing profits (or soliciting charitable contributions) to finance public conservation programs. Such policies are an essential part of the conservation "tool box". They can stimulate business action to protect the environment and raise significant financial resources for conservation. Nevertheless, such efforts are essentially a "rear-guard" action, based on the idea of defending nature against the onslaught of growing economic pressure.

Another option is available. We can create and expand markets for a range of ecosystem services, in the same way that markets now exist at a global level for carbon, and in some countries for sulfur dioxide (SO_2), nitrogen oxides (NO_x) or water quality. The idea is to make the sustainable management of ecosystems and the enhancement or delivery of ecosystem services a profitable enterprise, just like any other business venture.

The potential of market-based environmental stewardship is not in doubt; the real challenge is to demonstrate to policy-makers, business leaders and the general public that a range of ecosystem services can be managed effectively, efficiently and equitably using market-based mechanisms.

It is not easy to predict how much additional investment can be mobilized or which ecosystems or businesses will benefit most from market-based approaches to conservation. Who could have foreseen the explosive growth in demand for organic foods in some countries over the past 10 years? Who would have thought that European forests would come to dominate the supply of certified timber? What is clear, in both cases, is that large changes in corporate and consumer behavior were achieved with modest investments by those leading the campaign.

A key question is how to identify the most cost-effective market-based mechanisms, in terms of environmental outcomes and financial leverage. Experience to date suggests that rapid innovation can be achieved through voluntary, sector-wide initiatives, such as certification standards or voluntary offset schemes, but that widespread and sustained change in environmental performance often requires institutional and/or regulatory reforms, underpinned by the force of law.[26]

Partnerships among governments, conservation groups and businesses can stimulate new ways of delivering ecosystem services through the market. Increased effort is needed to identify investment opportunities that deliver the most valuable ecosystem services, to develop cost-effective ecosystem management systems for big and small businesses (e.g., standards, guidelines and metrics), and to design efficient and equitable market-based environmental policy and incentives. Robust monitoring and enforcement mechanisms are needed to ensure the credibility of markets for ecosystem services, and the organizations that implement them. Complementary efforts by governments and other stakeholders to conserve those ecosystems and services that are currently not marketable, but which have important option values for the future, are likewise essential, in order to secure and sustain the support of civil society for market-based conservation.

Whatever the future holds for market-based management of ecosystems, governments and NGOs will continue to play an important role. Markets cannot succeed without effective environmental regulations and equitable governance at local, national and international levels. Patience, vigilance and a good measure of flexibility will be needed by all stakeholders to ensure that market-based approaches live up to their promise.

Getting started

There is increasing awareness of the importance of ecosystems and their services for sustaining life on earth. This is accompanied by a growing sense of urgency about the need to halt the on-going loss and degradation of ecosystems. A range of multi-stakeholder initiatives involving governments, civil society organizations and the corporate sector have consistently emphasized this point, notably the Millennium Ecosystem Assessment (MA). The challenge today is to identify the practical steps that can be taken to conserve ecosystems and the role of business in such efforts.

Several business organizations and networks have produced guidelines and seek to share good practice relating to ecosystem management. These include the International Council on Mining and Minerals (ICMM) and the International Petroleum Industry Environment Conservation Association (IPIECA). A related initiative is the Business and Biodiversity Offsets Program (BBOP), which brings together business and conservation organizations to explore how to compensate for biodiversity loss. Another example is the Ecosystem Services Review (ESR) tool, developed by the WBCSD in collaboration with the World Resources Institute (WRI) and the Meridian Institute. Designed to help businesses understand their ecosystem impacts, dependence and assets, this tool is currently being tested by WBCSD member companies Akzo Nobel, BC Hydro, Dupont, Rio Tinto, Mondi and Syngenta. The ESR tool is based on and consistent with the MA, which outlines practical ways that businesses can understand the linkages between their activities and ecosystems, how to mitigate adverse effects, and how to take advantage of positive linkages.

Understand ecosystems and their services

The first step for many businesses is to reflect on the many products and services that ecosystems supply. While some products are well-known, e.g., freshwater, food, wood, some ecosystem services are less obvious but no less important, e.g., climate regulation, protection from soil erosion, pollination.

Assess dependence and impacts

Based on this reflection, businesses can begin to assess the ecosystem products and services on which they rely, either directly as raw materials or indirectly via support to production processes, as well as which ecosystems provide these benefits, where they are located and their current status. This assessment may be applied to the entire business supply chain. Individual companies need to be aware of the ecosystem goods and services on which their suppliers, partners and customers rely, and whether their own operations have an impact on ecosystem services upon which other people depend. Such a review can start small and focus on a single product line or business unit and subsequently be scaled up.

Reduce impact and scale up solutions

The next step is to develop strategies, policies and operational approaches for ecosystem management, guided by the hierarchy of "avoid, minimize, mitigate and offset" impacts. This should include setting targets for improved performance and reporting results to shareholders and other stakeholders. Finally, businesses should build alliances with scientific and research organizations, NGOs, industry associations and governments with a view to improving understanding of ecosystem services, scaling up solutions to ecosystem challenges and sharing their tools and experience.

Explore and pursue new business opportunities

Based on the process of ecosystem assessment and response outlined above, businesses will be better able to gauge what new opportunities might exist and to capitalize on them. Such opportunities may include developing new products, services and technological solutions, establishing new markets and new businesses, or taking advantage of previously unexploited cost reductions and revenue streams. Finally, businesses should lend support to government initiatives that strengthen incentives for more sustainable management of ecosystems.

Five steps to becoming a good trader of ecosystems services

1. Know that you are selling ecosystem services at full cost;
2. Know that you are buying ecosystems services at full cost;
3. Ensure clear ownership of the ecosystems services that are to be traded;
4. Ensure clear and transparent accountability of the ecological value accruing to the owner as a result of the sale;
5. Create competition among buyers and sellers.

Notes

1. This document is based on a forthcoming report entitled "Building Biodiversity Business", by Joshua Bishop, Sachin Kapila, Francis Hicks, Paul Mitchell and Frank Vorhies. The full report is available online at: http://www.iucn.org/themes/economics.

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The World Business Council for Sustainable Development (WBCSD) brings together some 200 international companies in a shared commitment to sustainable development through economic growth, ecological balance and social progress. Our members are drawn from more than 30 countries and 20 major industrial sectors. We also benefit from a global network of about 60 national and regional business councils and partner organizations.

Our mission is to provide business leadership as a catalyst for change toward sustainable development, and to support the business license to operate, innovate and grow in a world increasingly shaped by sustainable development issues.

Our objectives include:

Business Leadership – to be a leading business advocate on sustainable development;
Policy Development – to help develop policies that create framework conditions for the business contribution to sustainable development;
The Business Case – to develop and promote the business case for sustainable development;
Best Practice – to demonstrate the business contribution to sustainable development and share best practices among members;
Global Outreach – to contribute to a sustainable future for developing nations and nations in transition.

www.wbcsd.org

About the World Conservation Union (IUCN)

Founded in 1948, The World Conservation Union brings together States, government agencies and a diverse range of non-governmental organizations in a unique world partnership: over 1000 members in all, spread across some 140 countries.

As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable. A central Secretariat coordinates the IUCN Programme and serves the Union membership, representing their views on the world stage and providing them with the strategies, services, scientific knowledge and technical support they need to achieve their goals. Through its six Commissions, IUCN draws together over 10,000 expert volunteers in project teams and action groups, focusing in particular on species and biodiversity conservation and the management of habitats and natural resources. The Union has helped many countries to prepare National Conservation Strategies, and demonstrates the application of its knowledge through the field projects it supervises. Operations are increasingly decentralized and are carried forward by an expanding network of regional and country offices, located principally in developing countries.

The World Conservation Union builds on the strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

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