



Valuing Ecosystem Services

Capturing the true value of nature's capital

Forest ecosystems are human life-support systems. They provide a suite of goods and services that are vital to human health and livelihood—natural assets called ecosystem services.

■ Ecosystem services

Trees and forests are valued for basic goods, such as food and wood fiber, but they deliver other important services that are often perceived to be free and limitless—air and water purification, flood and climate regulation, biodiversity, and scenic landscapes are just a few. Taken for granted as public benefits, ecosystem services lack a formal market and are traditionally absent from society's balance sheet. As a result, their critical contributions are overlooked in public, corporate, and individual decisionmaking.

Putting a “price” on natural assets—recognizing the environmental, economic, and social values of forest ecosystem services—is one way to promote conservation and more responsible decisionmaking.

Growing human needs and demands have led to greater global consumption of natural resources and a significant decline in ecosystem services. Over the next three decades, the United States is likely to experience a loss of unfragmented forest due to dramatic housing development increases and the conversion of private forest land to urban use. Private forests constitute nearly 60 percent of the Nation's total forest land and provide the majority of ecosystem services to the public.

The loss or decline of forests, our ecological life-support systems, causes significant harm to the Nation's economy and to public health and well-being. Forests that are healthy and capable of adapting to major change will continue to be undervalued without public recognition of the important ecosystem services they provide, now and into the future.

■ Markets and payments for ecosystem services

Private investments in conservation can financially compensate landowners for protecting and enhancing ecosystem services, particularly in places where these services are degraded or scarce. In some cases, markets and payments for ecosystem services are a means of capturing the financial value of well-managed forests. Payments for carbon sequestration, watershed management, ecotourism, and a host of other services may supplement traditional forest revenues and promote good stewardship, especially when used together with other conservation tools.

Examples of market-based conservation exist throughout the world. In France, Perrier Vittel S.A., one of the largest bottlers of mineral water in the world, pays upstream landowners to follow prescribed management practices and use less intensive dairy farming techniques. In northeastern Paraguay, the U.S.-based AES Corporation invested \$2 million in the purchase and management of an important protected area of dense tropical forest. The project served as a greenhouse gas investment for AES, an international power producer interested in mitigating its carbon dioxide emissions.

Types of markets and payment mechanisms

- Public payments and support services
- Private contracts or deals
- Tax incentives and subsidies
- Trading of rights or credits under a regulatory cap
- Eco-labeling

The largest payment program in the United States is the U.S. Department of Agriculture Conservation Reserve Program (CRP). The CRP provides annual rental and cost-share payments to farmers and ranchers to reduce soil erosion, reduce sedimentation in lakes and streams, improve water quality, establish wildlife habitat, and enhance forest and wetland resources.

There isn't a single best approach to market-based conservation. A variety of compensation mechanisms are often used jointly with traditional regulation to successfully achieve conservation objectives. The most appropriate approach will depend on the ecosystem services of concern, potential buyers and sellers, the legal and regulatory climate, institutional capability, and local and regional conditions.

The introduction of payment mechanisms where none existed before involves the creation of new institutional arrangements and the involvement of new stakeholders. . .energy should be directed to building a combination of market, cooperative and regulatory arrangements that suit local conditions.

Landell-Mills, N.; Porras, I. 2002. Silver bullet or fool's gold. London: International Institute for Environment and Development (IIED). 272 p.

The Forest Service is working to advance market-based approaches to conservation and stewardship on private and community lands. Valuing ecosystem services presents an opportunity to:

- Promote public awareness of the importance of forests and grasslands to human well-being.
- Provide an economic incentive for private landowners to own and sustainably manage forests and rangelands.
- Encourage ecological restoration and support the partnerships and innovative solutions needed to finance restoration activities.
- Inspire individual efforts to reduce consumption of natural resources and minimize human impact on ecosystems.

Capturing the value of nature's capital will help protect the Nation's private forests and grasslands and the essential public benefits they provide.

For more information visit the Forest Service Web site: <http://www.fs.fed.us/ecosystemservices>

Payments in Costa Rica

Costa Rica presents one of the first national efforts to value forest ecosystem services. In 1996, Costa Rica adopted Forestry Law No. 7575, recognizing four critical services provided by the nation's forests: carbon sequestration, hydrological services, biodiversity protection, and scenic beauty. The Forestry Law establishes a framework for payments to landowners for ecosystem services, set forth in a program entitled PSA (*Pagos por Servicios Ambientales*) that is administered by the National Forestry Fund, FONAFIFO. Landowners are compensated for providing ecosystem services via reforestation, sustainable management, preservation, and regeneration activities. Payments to landowners are made over a 5-year period—during this time they relinquish their ecosystem service rights. Under contract, landowners agree to manage or protect their forests for 20 years in accordance with a management plan, an obligation that is written into a conservation easement and applies to all future purchasers of the land. The Government of Costa Rica acts as an intermediary, or broker, between the landowner and potential buyers. It sells carbon offsets and watershed protection to domestic and international buyers in order to compensate its landowners. The main source of funding, however, is a tax on fuel sales—5 percent of fuel sales is earmarked to forestry through FONAFIFO. The Forestry Law also prohibits forest conversion and requires all working forests to be placed under an approved management plan.

From Chomitz et al. 1998. Financing Environmental Services: The Costa Rican Experience. Publication Number 10. Washington, DC: The World Bank: 157-169.



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