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'Ecosystem services': a vital term in policy debates

Walter Reid, Robert Watson and Harold Mooney
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Walter Reid, Robert Watson and Harold Mooney defend the use of the term 'ecosystem services' as an essential way of communicating to policymakers the importance of the benefits that people receive from ecosystems.



The findings of the Millennium Ecosystem Assessment (MA) — the largest-ever international assessment of the consequences of ecosystem change for human wellbeing — were released in March 2005.

The assessment involved more than 1,300 experts from 95 countries as authors, and was reviewed by over 800 experts and more than 50 governments. It was called for jointly by the UN secretary-general and parties to four international environmental conventions. Among these was the Convention to Combat Desertification, which decided to support the preparation of the assessment and to request information from it.

A cornerstone of the assessment is the concept of 'ecosystem services'. This term has been widely used by the scientific community and in international environmental negotiations, and is defined by the MA as the benefits that people receive from ecosystems.

Following the release of the MA findings, however, some governments objected during a meeting of the Convention to Combat Desertification to use of the term 'ecosystem services'. They argued that referring to benefits obtained from nature as 'services' implies that individuals must begin to pay for benefits that were formerly obtained for free. They were also concerned about the concept of valuation of ecosystem services, particularly in the context of ongoing discussions concerning water pricing.

In the desertification meeting, governments decided to substitute the term 'ecosystem services' with 'ecosystem benefits' in several paragraphs. That solution is consistent with the MA definition. But the term 'ecosystem benefits' is likely to be far less helpful in communicating the importance of ecosystem services to decision-makers outside the environmental sector, such as ministers of planning, ministers of finance, or various development-related institutions.

Ensuring human well-being

It is important to understand that, as used and defined in the MA (and as already used in existing international documents), the term and concept of 'ecosystem services' in no way implies an automatic requirement or obligation on the part of the consumer to pay directly for the supply of the service.

The term does, however, imply that the service is of value to people (in terms of economic, health, cultural or other benefits), and that the degradation or loss of the service represents a harmful impact on human wellbeing.

Ecosystems provide multiple benefits, and are vital to human wellbeing. Many of these benefits have historically been free to all humans as the result of the working of nature, such as clean air to breathe, fresh water to drink, fuel for warmth and cooking, and food to eat.

However, many of these ecosystem services (some 60 per cent of the 24 services examined in the MA) are over-used, mismanaged or degraded. In order to prevent overexploitation of certain ecosystem services, or to provide incentives to increase the production of other services, various types of property rights have been established.

Common property resource management systems, for example, in which communities regulated access to and the use of resources that might otherwise have been treated as open access resources, often served as effective means of regulating the use of some services, such as fisheries, livestock production in pastoral systems, and forest products.

Similarly, private ownership of land or resources by individuals or corporations provides rights to those owners that enable them to produce and sell services such as food crops. And, of course, individuals who obtain free services (such as clean water) can also add value and sell those services (such as bottled water) to others.

A choice of approaches

A variety of policy choices are available to reduce the degradation of ecosystem services and retain the benefits for people. These include regulatory approaches (for example establishing 'no take' zones in fisheries), technological approaches (such as promoting drip irrigation systems to reduce water use), and economic approaches, which can include assigning private property rights to the resource, and enabling the owners to charge for the use of the service.

The nature of the service determines in part which approaches can be used. For example, it would be difficult to establish a market mechanism to capture the value of some ecosystem services, such as the benefits that ecosystems provide in regulating regional temperature and rainfall.

Furthermore, among those approaches that could be used, different societies can decide for themselves which would be most effective and culturally appropriate.

In other words, it is up to the societies involved to determine whether an ecosystem service should remain free to the consuming public, whether markets should be created to capture some of that value and thereby provide an incentive for maintaining the service, or whether regulations should restrict access to the service.

For example, although in many societies water is consumed as a free service, in other societies consumers pay for the delivery of water — or at least the cost of purification and delivery — in order to conserve and limit the waste of this valuable and scarce resource.

Conservation through economic instruments

In recent years, there has been an increase in the use of economic instruments to promote the conservation of ecosystem services.

In some cases, the producers of services that were formerly provided freely have been paid by the government to provide those services. For example, Costa Rica has established a system of payments for ecosystem services under which farmers are paid to plant or maintain forest cover on their land, in order to maintain services that include water purification, erosion control, carbon sequestration, and biodiversity conservation.

In other cases, markets are being established for ecosystem services that were formerly freely available — for example, carbon markets that enable a landowner to be paid for management activities that increase the sequestration of carbon. But many policy alternatives to market-based approaches exist, and different societies are likely to opt for different mechanisms.

Different societies, and even members within societies, have different value systems, which change through time and circumstance. This is why the process of valuation — or calculating the economic value of ecosystem services — is difficult, except for those widely traded in the marketplace.

This inevitably leads to some contention (and confusion) when analysing the value of ecosystem services — or the benefits derived from the work of nature — since these values are place and time dependent.

But it is clearly in everybody's interest to work toward maintaining functioning ecosystems that provide essential services for human wellbeing, as well as the basis of sustainable development.

In line with this, the MA concluded that decision-makers should make sure the value of all ecosystem services — not just those bought and sold in the market — are taken into account when making decisions

Walter V. Reid is director of the Millennium Ecosystem Assessment, Robert T. Watson is chief scientist at The World Bank, and Harold A. Mooney is professor of biological sciences at Stanford University, United States.

Correspondence about this article should be sent to reid@millenniumassessment.org

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