Peddling the new commodities

Good land management is worth paying for: it just needs the markets and the buyers.

In 2002, the Prime Minister's Science, Engineering and Innovation Council reported that environmental degradation occurs because our economy makes it cheaper to degrade Australia than to care for it. This is in part because the value of ecosystem services has been unrecognised and unpriced.

Ecosystem services include pest control, protection from wind erosion, clean water, healthy soils, pollination, and the fulfilment of human cultural, spiritual and recreational needs.

Valuing these services, however, is a difficult task: who can put a price on clean air, clean water, or fertile soil?

But the reality is that every land use decision involves implicit assumptions about value, even when no dollar figure is assigned. One way of estimating ecosystem service values is to consider what it would cost to provide them in other ways.

For example, New York City avoided spending US$6 billion on new water treatment plants by buying land around its reservoirs and investing in improved catchment management practices. This decision enhanced wildlife habitat and recreational values, as well as water quality.

In Australia, CSIRO Sustainable Ecosystems, in collaboration with the Myer Foundation, has initiated an Ecosystems Services Project (see story on page 34).

The project aims to assess the goods and services produced by ecosystems in catchments across the country, and help policy makers, planners and land managers understand their ecological, economic and social values, at local, regional, national and international scales.

Marketing ecosystem services

One of the key challenges of the Ecosystems Services Project, however, lies in defining markets for these services. While farmers should be expected to accept a duty of care to protect the environment, it is not fair that they should bear all the costs when the benefits of their actions accrue to others. Positive incentives and rewards also work much better at encouraging behavioural change, than regulation and lawsuits.

During the Ecosystem Services Project, Stuart Whitten will work with stakeholders to identify 'ecosystem services commodities', and markets that will reward landholders for providing them.

As part of the Ecosystems Services Project, CSIRO economist Stuart Whitten, together with regional and other stakeholders, has met the challenge to identify markets that will reward landholders for the ecosystem services they provide.

'The "markets component" of the project will define ecosystem services commodities that can be bought and sold, such as a carbon, water quality, salinity or biodiversity credit,' Whitten says.

The project will also pilot a range of marketing mechanisms to bring buyers and sellers of these commodities together. These may include electronic market places, auctions or tenders for payments to

CSIRO Land and Water

On farms of the future, traditional commodities such as wool and wheat may be traded alongside environmental ones such as carbon, water quality, salinity and biodiversity.

CSIRO Land and Water

Environmental degradation occurs because our economy makes it cheaper to degrade Australia than to care for it. This is in part because ecosystem services have not been valued.

Farming beyond food and fibre

In 1999, the Myer Foundation granted CSIRO Sustainable Ecosystems $1 million over four years to assess the nature and value of services provided by Australian ecosystems.

The project has grown to include five CSIRO divisions, Land and Water Australia, the Rainforest and Cotton CRCs, the University of New England, the Goulburn Broken Catchment Management Authority, and various government and community representatives.

The aim of the project is to study the services people obtain from their environments, the economic and social values inherent in these services, and the opportunities that can arise from considering these services more fully in land management policies and decisions.

Ultimately, the idea is to help scientists and communities deliver the right information to policy developers and decision makers, to move towards more sustainable land management practices.

To achieve these goals, the project looks at a cross-section of ecosystem services that underpin major Australian traditional agricultural industries, such as dairy, horticulture, beef, wool, and cropping.

Ecosystem services that support the growing 'quality of life' industries such as recreation, rural sub-division and tourism are also being examined.

Possible changes to these services under various land management scenarios, and what these changes might mean to Australians in economic, social and ecological terms are being considered in partnership with a range of stakeholders.

Coupled with the scenarios, biophysical models are being developed to determine the ability of ecosystems to continue to provide services under various land use pressures.

A 'markets' component to the project, led by Stuart Whitten of CSIRO Sustainable Ecosystems, also seeks to design and test future markets for ecosystem services.

For example, a farm of the future might sell wheat and wool to the world market, salinity credits to the local catchment management authority, water filtration credits to the urban water authority, and biodiversity credits to a philanthropic trust.

increase production of ecosystem services, and 'offsets', which manage negative environmental impacts at one site with positive actions at another.

'Once commodities and market mechanisms for ecosystem services are defined, we will work with catchment communities to find buyers who are willing to invest in environmental services,' Whitten says. 'These may include a steel company for carbon credits, or urban water authorities for water filtration services, for example.'

The Victorian Government is trialling an 'auctioning' marketing mechanism in the form of the Bush Tender Scheme.

Under the scheme, landholders tender management services they're prepared to offer to improve native vegetation and biodiversity on their land. This may include protection and management of native vegetation or revegetation of cleared areas, above that required by law.

Bids are assessed on the basis of the conservation value of the site, the level of habitat service offered by the landholder, and the cost. Successful landholders are then paid for their services on a short-term contract. Since the first Bush Tender trial in 2001–2002, close to 3200 hectares have been secured for protection.

More about ecosystem services

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