



# Environmental Services from Forests and their Valuation

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## The Issue

Forests produce a wide range of non-wood products and services that have been traditionally treated as public goods with no explicit financial value. Examples include carbon sequestration, ground-and surface-water management, land rehabilitation, erosion control and biodiversity enhancement. Effective valuation of environmental services will assist forestry in competing with other forms of land use which may have higher short term returns.

## Background

A fundamental premise of sustainable forest management is that forests are managed sustainably for a range of benefits. However, financial returns from forest management have been restricted to traditional wood and wood related products, to non wood products and services where beneficiaries are clearly identifiable (e.g. beekeeping, seed collection, tours, some proportion of fire management), and to services where a general user fee may be payable, such as recreation.

The broader environmental services provided by forests have been treated as public goods, i.e. many people benefit but at no direct cost to themselves. For example, forests provide regulation of water flow and the maintenance of water quality, are reservoirs for biological diversity and play a key role in the long term survival of many species. Individuals do not pay for these benefits, at least not directly and certainly with no specific relationship between payment and service provision. Charges are often levied to help defray costs for some national parks. Recognition of the financial values of environmental services is creating opportunities for demonstrating the full value of forests as a land use thus increasing the potential for returns from existing forests and attracting investment to new forests.

Increasingly, planted forests are being established to deliver environmental benefits which have often been lost due to historic removal of native vegetation, particularly trees. Examples include planting trees for groundwater management to address dryland salinity; planting along riparian corridors to filter runoff, reduce erosion and enhance biodiversity; and planting trees to act as carbon sinks. Native forests are also being managed to deliver specific environmental services, such as protection of biodiversity and catchment management.

Lack of financial values attached to environmental services can make it difficult to attract investment funds to enhance management of existing forests or create new forests. The value of existing forests is not adequately accounted for because the economic value of environmental services and the cost of losing them is not being recognised. As a consequence, there is greater pressure to convert the forest to another land use that is apparently more profitable.

Purchasers of environmental services can be governments on behalf of the community when the benefits are broadly based or private entities when the benefits accrue to companies or individuals. Payment for environmental services can be based on a relatively simple contract that sets out the nature of the service and the terms under which they are supplied. This will require:

- quantification of the environmental service in a way that can be measured consistently and objectively;

- independent verification and validation of the service to engender confidence among potential buyers;

- identification of property rights to the environmental service since it is difficult to sell something where ownership is uncertain;

identification and management of risks associated with delivering the service over time and ensuring appropriate financial settlement.

The potential for identifying and securing financial returns for the environmental services supplied by forests offers opportunities to revolutionise the way in which current forests are managed and investment in new forests is driven. In particular, there will be wider opportunities for attracting both private sector and more cost-effective public sector investment for reforestation in rural areas, because at least some of the environmental benefits from that activity could attract real financial returns.

## **Policy**

The Institute of Foresters of Australia (IFA) advocates a greater recognition by governments and the community of the range of environmental services supplied by forests as well as proper consideration of these values when land use decisions are made.

The IFA supports and encourages:

- continuing efforts to identify, quantify and financially value the full suite of environmental services from forests, including the development of standardised measurement, verification and risk management procedures;
- assessment of implications for environmental services associated with land use policies;
- development of market mechanisms to value and trade environmental services.

## **Further Information**

Murtough, G., Aretino, B. and Matysek, A. (2002). Creating markets for ecosystem services. Productivity Commission Staff Research Paper.

O'Hara, Tony (2001). Environmental Services from Forests. [www.forest.nsw.gov.au](http://www.forest.nsw.gov.au)

Forest Trends [www.foresttrends.org](http://www.foresttrends.org)

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