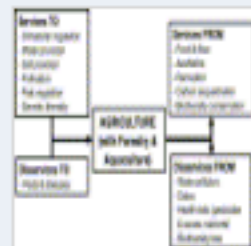


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Abstract

Crop and rangelands are over 25% of the Earth's land area, and they are expanding. Agricultural ecosystems rely on a suite of supporting ecosystem services to provide food, fiber and fuel as well as a range of accompanying but non-marketed ecosystem services (ES). Ecosystem services from agriculture include regulation of water and climate systems, aesthetic and cultural services, as well as enhanced supporting services (such as soil fertility). Many of these ES are appreciated by people, but they lack markets, so they lack the incentives for provision that come with prices. For public policy decisions to take them into account, non-market valuation techniques are needed, such as travel cost, contingent valuation, hedonic valuation, and cost-based or factor-income approaches. This article offers an overview of ES from agriculture and non-market valuation methods as it introduces the articles in this special section on "Ecosystem Services and Agriculture." Understanding how ecological functions generate ES is fundamental to management, but so too is understanding how humans perceive and value those services. Research is required both to design cost-effective incentives to provide ES and to measure which kinds of ES could provide the greatest overall welfare benefits to society. Agricultural ecosystems offer newly recognized potential to deliver more diverse ecosystem services and mitigate the level of past ecosystem disservices. This special section of *Ecological Economics* conveys both how these are becoming possible and the challenges to science and public policy design of turning that potential into reality.

Keywords

Ecosystem services; Agriculture; Nonmarket valuation; Research needs

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