

Assessing client information needs on ecosystem services

What are ecosystem services?

Ecosystem services are the “benefits that humans obtain from ecosystems.” These include provisioning services (food, fiber), regulating services (climate, flood control), cultural services (aesthetics, recreation), and supporting services (nutrient cycling, soil formation). These services include a number of benefits that have been assumed to be free or greatly undervalued.

The Pacific Northwest Research Station has begun a coordinated effort to assist public and private landowners and organizations interested in developing market-based ecosystem services transactions. We are engaging a wide range of clients representing family forest owners, farmers, non-governmental organizations, investment bankers and consulting foresters, as well as a number of regulatory agencies such as the Environmental Protection Agency, U.S. Fish and Wildlife Service, Army Corps of Engineers, and a variety of state regulatory agencies. At every stage of this project, client input is extremely important to us. Therefore, we have incorporated information-users as active partners throughout the entire development process to optimize the diffusion of our information.

Our first step was to help stakeholders understand how they might either sell or buy these ecosystem services, and what these types of transactions might entail. We held a workshop in January 2007 to explore these ideas, and found our diverse audience very receptive and eager to engage in the topic. Many workshop attendees expressed interest in focusing more closely on some of the major issues relating to ecosystem service markets, so with the help of the Western Forestry Conservation Association, we held follow-up meetings with four different user groups: 1. family forest land owners, 2. forest industry, 3. conservation groups, and 4. public agencies.

To follow up on the information-gathering stage, we here present some of the input we heard from clients at the workshop and client meetings, and then a summary of their common information needs.

What we've heard from our clients:

Family foresters

Family forest land owners are interested in receiving recognition for their good land stewardship, and in finding ways to provide monetary benefits for the next generation of landowners.

They felt that regulators should not dictate mandatory rules, but instead should set goals that landowners could meet in a variety of ways. Furthermore, the Forest Service should not be involved with market transactions, although they could perhaps trade ecosystem service credits for efforts such as restoration projects.

Information needs for family forest land owners include the following topics:

- Tracking carbon inputs and outputs
- Building models to calibrate ecosystem service markets
- Replicating large-scale projects such as paired watersheds to evaluate ecosystem services
- Determining relationship between actions on the ground and resulting ecological services

Public agencies

Public agency clients are interested in ecosystem services as a way to combine ecosystem functions with revenue, and as a way to engage the public in developing values for ecosystems.

Unlike the other three groups, these clients think public agencies CAN be involved in market transactions in ecosystem services.

Research needs include:

- An index of ecosystem factors
- Developing a set of metrics on production functions
- Identifying opportunities and barriers for ecosystem services, and the costs and benefits of them

They also suggested disseminating research information in a variety of ways, including briefing sheets as well as scientific and technical reports.

Forest industry

Forest industry clients are mainly interested in exploring how ecosystem services

could result in additional sources of revenue.

The forest industry also felt that the Forest Service should not enter into transactions, as this could flood markets and lower prices for services. Instead, they felt that public land management agencies could demonstrate methods for quantifying and monitoring the delivery of various ecosystem services.

Their information needs include:

- Finding ways to measure ecosystem services
- Understanding impacts of conversion of forest land to development and other uses

Conservation groups

Conservation groups differed from the other user groups in that they said ecosystem services should NOT include commodities such as wood and fiber, since these products already have markets.

These clients also said that regulatory agencies are too narrowly focused, and that they do not consider ecosystems in an integrated fashion. They want regulators to design an integrated trading system so that every agency does not have to serve as a broker for one or two services without recognition of the interactions among individual services.

This group also felt that the Forest Service should not get involved in transactions, as values for services on private lands will be undercut, which would hinder getting markets established.

Information needs for this group include:

- Valuation of different ecosystem services
- Determining the social and economic benefits of ecosystem services
- Research on production functions
- Models of the impacts of different regulatory approaches

Common themes

People from all user groups recognized the important role of regulations in developing ecosystem service markets. Well-structured regulations are seen as critical to the establishment of ecosystem service markets.

Another shared theme was uncertainty about markets, particularly the difficulty in measuring them. Currently they seem too young and undeveloped for clients to feel confident in exploring various opportunities.

There was agreement that multiple agencies should integrate efforts and work together across broad geographic areas.

Every client group mentioned carbon as one of the major ecosystem service markets in the next five years.

What comes next?

Working with the information we gathered in the workshop and the client meetings, we have identified a set of important research needs common to private landowners, forest managers, and conservation organizations. These topics adhere closely to the suggestions we heard from our clients, and represent areas in which the PNW Station could make meaningful contributions to the development and application of new knowledge and tools related to ecosystem services and markets.

Our ultimate success rests on the ability of our clients to actively participate in and support the creation and use of applied knowledge and tools.

Key research needs:

Explore ways to measure and value ecosystem services. This includes topics like tracking carbon inputs and outputs, as well as general valuation of a variety of ecosystem services.

Clearly define the role of regulations in developing ecosystem service markets. Regulations have a critical role in the success of developing markets. Although some client groups differed in their opinion of how strict regulations should be, everyone agreed that well-structured regulations are critical for establishing markets.

Determine the social and economic benefits of ecosystem services. This included a request for building models to calibrate ecosystem service markets, a tool for evaluating the impacts of forest land conversion to development, and a way to identify opportunities and barriers for these ecosystem services.

Develop an index of ecosystem services and factors. This included the benefits and challenges of bundling ecosystem services, and developing a set of metrics on production functions.

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