

## Flows #1: Developing Markets for Water Services from Forests

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In response to the emerging interest in the use of financial mechanisms for capturing the returns on investments in ecosystem services, a new Forest Trends paper by Nels Johnson, Andy White and Danièle Perrot-Maître, “Developing Markets for Water Services from Forests: Issues and Lessons for Innovators,” offers a concise review of the range of challenges inherent to this undertaking. Although it is written in a manner that would appeal to the private sector that there are opportunities in the “emerging markets” in freshwater, a situation attributed both to the “failure of the public sector” and the “immense size of the global market”, the details show a complex state of affairs, in which the public, private and also the non-profit sectors play various complementary roles, just as they do in any market.

The paper is based on a companion review of case studies by Perrot-Maître and Patsy Davis (as summarized in the paper and available separately) valuable in their own right because they illustrate a range of mechanisms, ranging from self-organized private deals between landowners and those who benefit from a service, to trading schemes which take place between private entities under a regulatory cap, and public payment schemes in which fees are collected by the government and invested in watershed management activities. Although some are in the pilot phase, the authors suggest that these cases all appear to be effective for avoiding or reducing costs, at least in the short-term. Best known is the New York City’s watershed management program, but smaller scale examples of deals between private parties are also provided, such as that between Perrier-Vittel and farmers, to switch to organic farming and reforest infiltration zones, so as to protect the quality of Perrier bottled water.

In the long-term, whether costs are avoided or merely shifted will depend on whether the management activities taken effectively deliver the service that is expected. The hydrological functions of forests are mostly site-specific the direction and magnitude of responses to land use change in terms of changes in streamflow quantities, qualities and timing depend heavily on a combination of natural processes and actual/potential land use and land management practices found at a specific place. Similarly, the possibility of landowners being paid for services provided will depend on whether there are downstream beneficiaries willing and able to compensate them. The paper identifies a number of related questions, the answers to

which can help to identify actual market potential for a particular case. Challenges and recommended next steps point to clear roles for the public and non-profit sectors in creating a context needed for new market approaches to work. For example, in reducing the transaction costs of the research needed to demonstrate the existence of the service and links to management practices particularly at the larger scales, in processes of stakeholder participation and negotiation, in monitoring and verification, and in advocating legal and regulatory changes that may be required.

The paper provides a good overview of this emerging field as well as an interesting set of categorizations, checklists and practical guidance, and is to be commended for recognizing the complexity of forest-water relationships. This complexity must be acknowledged and worked through if markets for watershed services are to provide value for money. In practice this will often require going beyond conventional wisdom and taking on board the current state of knowledge on forest hydrology. The paper reveals the challenge

this poses in its references to one of the key issues of debate amongst academics and practitioners the existence (or not) of a dry season sponge effect provided by forest cover. The paper states that 'some research' indicates forests are likely to decrease water supplies during both wet and dry seasons and that in 'some cases' forest can raise minimum flows in the dry season.

Part of the authors' difficulty in this area might have been avoided by examining two separate cases: deforestation and reforestation. Continued uncertainty over the effects of deforestation on seasonal flows might argue for caution and a risk premium that could be expressed through market payments. Meanwhile the paucity of hard scientific evidence for increases in dry season baseflow following reforestation argues for careful scrutiny of major investments based on this premise. In the end, investments in conservation or reforestation will depend on the relative importance of these and other hydrological functions vis-a-vis the importance of the other goods and services associated with current and alternative land uses in a specific site.

The final challenge identified in the paper is to develop a mechanism to collect, analyze and disseminate information and lessons from these emerging experiences. This is the primary motivation for the development of this listserve, FLOWS, of which this message represents the first issue. The listserve provides an independent perspective and commentary on key papers addressing hydrology, economics, and the development of markets, policies and institutional arrangements for watershed services. FLOWS was created to keep its readership up to date and informed regarding: - the hydrological impacts of land use change and their socio-economic consequences; - cost-effective, environmentally sound and socially equitable solutions to land use/forest/water problems; and - the potential role and scope of ecosystem management and market-based instruments as options for improving water resources management.

FLOWS is a free service, independently developed and produced by Bruce Aylward and Sylvia Tognetti, with support and collaboration of Forest Trends, [www.forest-trends.org](http://www.forest-trends.org). General comments on FLOWS are welcome. Please send them to <mailto:flows@forest-trends.org>.

The papers by Johnson et al. (2001) and Perrot-Maître and Davis (2001) may be downloaded in pdf format (in English or Chinese) from the Forest Trends website [http://www.forest-trends.org/resources/type\\_pub.htm](http://www.forest-trends.org/resources/type_pub.htm). Or you can write to Deborah Di Dio at <mailto:ddidio@forest-trends.org> to receive a copy via email with "Publication Request" in the Subject line; please indicate in the text which of the two documents you wish to obtain and in what preferred language and format.