

Watershed services: who pays and for what?

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There is increasing interest in using payments to promote sound watershed management. Schemes range from small pilot projects involving just five families to a massive Chinese project that aims to reach 15 million farmers. The expectation is that such schemes will help to resolve problems such as declining water flows, flooding and deteriorating water quality by bringing in new funding from water users, the private sector in particular, and by providing incentives for sustainable management to those closest to natural resources. A review of active and proposed schemes in developing nations shows, however, that most schemes still depend on donor or government funding, and few are driven by water users. Meanwhile, evidence of benefits remains patchy.

There is growing interest in making payments in return for practices believed to benefit people downstream through improvements in water quality and regularity and volume of flow.

These 'payments for watershed services' vary greatly in scale, from a pilot project in Nicaragua that rewards just 5 families on 13 hectares of land to a massive Chinese project that aims to reach 15 million farmers in 27,000 villages over 32 million hectares of land by 2010.

Such schemes are expected to attract funding, particularly from the private sector, to support sound environmental management. It is also hoped that, where there is a need, payments can contribute to poverty reduction in upland communities.

But despite this enthusiasm, there is little hard evidence that payments work in practice. To examine this in detail, IIED analysed a set of active or proposed systems worldwide.

Our findings, summarised here, are drawn from

published and unpublished material as well as direct contact with the key participants in the initiatives. They will be published in detail this year¹ and are available online as individual case studies².

Progress in enacting payments for watershed services has not been easy. Only about half of the 25 schemes reported as pilot or mature in 2002³ are still active. And only three of 16 proposed schemes reported in 2002 have proceeded to a pilot stage.

But many new proposals and initiatives are emerging all over the developing world. Most of the pilot and active schemes are in Latin America. There has also been considerable preparatory work for schemes in Asia, but Africa has seen relatively little progress. The continent has only one active scheme, Working for Water in South Africa, but there are promising proposals in Kenya and Tanzania.

Overall, we identified nine active national programmes and 39 local schemes, as well as eight advanced and 37 preliminary proposals. We found that while interest in payments schemes is rising, there is only patchy evidence for social and environmental benefits to date.

Strict definitions of payments for watershed services emphasise conditionality and the voluntary nature of transactions, but although many schemes have these aims, very few meet them. We used a broader definition to include all schemes in which payments in cash or in kind are made either to upstream land-users or by downstream water users to address an external impact of upstream land management on the watershed. In some cases both types of payment are combined.

Who pays, and for what?

Most of the active schemes (six national and 22 local) involved payments to land users.

KEY MESSAGES:

- **Enthusiasm for payments for watershed services is rising, despite little evidence of their effectiveness.**
- **Most active schemes are in Latin America – Asia is catching up but Africa lags behind.**
- **Payments schemes have yet to yield significant funds from private sector water users so depend on governments and donors.**
- **Schemes have rarely been led by water users, whether private or public. They need to be more integrated with resource policy and allocation.**
- **First generation schemes targeted areas critical for watershed provision so benefits for the poor were more by accident than design. It is too early to judge the success of new schemes targeting the poor as suppliers of watershed services.**
- **While there are positive perceptions in existing schemes there is little empirical evidence, except for beneficial impacts on water quality.**
- **There is little evidence that poor water users have been harmed.**

Payments are not made directly for the provision of watershed services, which is hard to measure and attribute.

Instead, most payments are for improved land practices – such as organic agriculture, soil conservation and sustainable forest management – that are believed to be likely to result in improved water provision. Payments for conserving ecosystems, forests in particular, are also common.

We also examined a few schemes that involve payments from water users even though there is not yet a mechanism to transfer funds to upstream landholders (e.g. Plan Verde and Cauca Valley in Colombia).

Although 60% of the local schemes receive some funds from the private sector through donations or fees paid by water users, there is still heavy dependence on government and international donors. Most payments are determined administratively rather than in response to market forces, sometimes after an analysis of opportunity costs for landholders. There are very few cases of direct negotiation between suppliers and water users.

Few schemes are driven by water users

Most schemes can be considered supply-led. They involve a government agency, donor or conservation organisation that sees payments as a possible way to address a resource management problem upstream. This applies to the national schemes in Costa Rica and Mexico that address the threat of deforestation.

Other than the schemes involving payments only from water users, relatively few initiatives have been primarily demand-led or had water users as the main champions. Exceptions include two national programmes in China where the government has been responding to problems of floods, and a local scheme in Honduras where conflicts between water users downstream and coffee producers upstream about declining water quality led to negotiations for a payments scheme.

Evidence of benefits is patchy

Evidence of the delivery of watershed services has proved elusive. In many schemes the reported impacts on water flow are based on the views of users, local people or the scheme's administrators rather than on on-site measurements and modelling of land use and water relationships.

Changes in water quality have proved easier to link with payments. In China, run-off from land reforested under the Sloping Lands Conversion Programme has been found to result in significantly less sediment being deposited downstream than run-off from comparable farmland in the same area.

Evidence of benefits to sellers of watershed services is mixed. The Pimampiro scheme in Ecuador reports payments equal to 20-30% of household income, but schemes in Nicaragua and Honduras report payments that are low relative to local incomes and to the money that could be made from keeping to conventional land uses or practices such as converting forests to agriculture.

Apart from in Mexico, little of the land involved in payments schemes is communally owned or used by poor people. Small-scale farmers are included in some schemes but this happens more by accident than design. But some of the newer schemes such as the RUPES programme in South-East Asia and Cuencas Andinas in South America are actively targeting poor farmers, although none is making payments yet.

There is little indication from local schemes that the additional water-use fees to fund payments reduce poor households' access to water. In five schemes payments are a low percentage of users' incomes and are considered acceptable. Four more schemes have mechanisms to reduce the impacts on the poorest users such as a lifeline tariff system (Cuenca, Ecuador), payment through labour (Esteli, Nicaragua) and voluntary contributions (two Mexican schemes).

Where next?

If payment schemes are to be financially self-sustaining, they need to be driven more by the water users. They will also need to be made an integral part of water resource management and allocation policy. For this to happen, better evidence is needed of the beneficial impacts of sustainable land management practices on water flow and quality, and on the ability of payments to change the behaviour of landholders.

Footnotes

1 Porras, I., Grieg-Gran, M. and N. Neves. 2007. All That Glitters: A review of payments for watershed services in developing countries. IIED.

2 www.watershedmarkets.org

3 Landell-Mills, N. and I.T. Porras. 2002. Silver Bullet or Fool's Gold: A global review of markets for forest environmental services and their impact on the poor. IIED.

CONTACT: