

of the climate) and those of more local importance (e.g. soil retention). In practice, such an endeavour unites the two most popular types of PES transactions: carbon and water.

As with any type of carbon-motivated scheme, there is a real risk that other environmental services, which might have importance for different purposes and at smaller scales, could be undermined by carbon-dominated interests. An example would be the depletion of water tables in support of large-scale timber plantations. By focusing on the landscape as opposed to a specific environmental service, trade-offs and potential conflicts of interests between land-uses are dealt with in an integrated way. It is thus hoped that the landscape approach can address risks associated with a potential mismatch between global services (e.g. the carbon market) and local livelihoods, such as the depletion of water tables in support of carbon-fuelled investments in forest plantations. While an adequate fit between ecosystem management and the pre-existing range of institutions is rarely present at the outset (Folke et al. 2007), adaptive management and institutional evolution will take place over time (Shepherd 2008).

The carbon locomotive

Incentives for the climate regulating services of forests currently form the largest PES market. This market is being fuelled by the growing interest in paying for reduced emissions from deforestation and forest degradation, conservation, enhanced carbon stocks, and sustainably managed forests (all of which are now united under the banner of REDD+). While discussions on establishing an international compliance market for such projects are still ongoing, the voluntary marketplace is witnessing a rapid increase in REDD+ projects [(currentpsmina190 Tc 0untT* 0Tw (espeited conumner aplettee for pr-pofor andbiodivrsity-t)T]

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credits, the establishment of watershed management structures capable of administering PES funds could help ensure that potential opportunities from the carbon market are effectively and sustainably seized. In areas such as the Tinkisso landscape, the challenge of strengthening institutional capacity will inevitably need to be met if carbon-related opportunities are to be seized. Existing efforts aiming at instituting and supporting local watershed management authorities, such as those being carried out through the establishment of 'local watershed committees' (CLE ... 'Comités Locaux de l'Eau'), could serve as a useful starting point for experimenting with PES in this region. Managing the landscape around the maintenance and enhancement of locally-enjoyed environmental services could then serve as a means of capitalising on these services with more widespread effects.

Marketing landscapes

While lessons are still being learned, it appears that the landscape approach is well adapted for the joint management of different environmental services, as it seeks to balance different kinds of land-use. The integration of global and local concerns is particularly important in terms of ensuring that local livelihoods (e.g. food security) are not undermined by external interests, but it could also support economic development within the landscape.

Ghazoul et al. (2009) advance the idea of expanding the PES model to create 'landscape labels' that could be used to market the different goods and services provided in a given area. In this perspective, environmental services which receive less attention or that cannot be easily measured in quantitative terms (e.g. cultural services) could be included in the marketing of different goods and services. Herein lies the 'strong suit' of PES ... its capacity to highlight under-appreciated attributes of ecosystems and to raise awareness of their economic values. One of these attributes is socio-ecological resilience, which deserves to be a key focus of conservation efforts.

In the true PES spirit of reaching out to previously unengaged actors (i.e. beneficiaries of environmental services), it is hoped that the landscape-level integration of different environmental goods and services could serve as a means of capturing tourism-related benefits. As the qualitative attributes of conservation (e.g. landscape beauty, socio-ecological resilience) gain in prominence, marketing opportunities could be more easily seized. Capitalising on environmental services to make conservation more economically attractive can help support rural development in many parts of the world. However, as stated by Ribot (2008), these opportunities can only be effectively realised if conservation efforts also support the strengthening of local democracy and governance.

Some basic recommendations for developing PES in landscapes

Van Noordwijk et al. (2007) provide a useful framework for assessing the relevance and effectiveness of implementing PES in landscapes. The main criteria put forward are to ensure that the intervention is feasible (e.g. opportunity costs are covered by the payments), voluntary (e.g. free, prior and informed consent is achieved), conditional (e.g. sanctions exist), and pro-poor (e.g. vulnerabilities are reduced). It needs to be emphasised that PES may not be desirable everywhere, and especially not in areas where there is a high risk of conflict over resources. Another

important consideration is that the payment options need to remain broad, as cash might not be the preferred incentive in certain instances.

Bearing these main elements in mind, the LLS experience has revealed some additional lessons which might be useful for experimenting with PES in rural landscapes. A key finding is the importance of balancing the opportunities brought through access to international markets with local needs (e.g. access to resources). Identifying and addressing trade-offs is a central concern of the LLS approach, and capitalising on environmental service benefits therefore needs to fit within a broader strategy for sustainable rural development. It is recommended that international markets for environmental services are only pursued in contexts where local-level benefit sharing mechanisms have been reliably tested. The existence of functioning institutions that are capable of ensuring an equitable sharing of benefits at the landscape level could offer a reliable template for ensuring that the global carbon market is supporting, and not disrupting, the sustainable development of rural landscapes.

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