# PES Methodology

Over the last fifty years various instruments have been used to address the market failures behind the collapse of ecosystem services – taxes, subsidies, user-charges, access-fees, penalties. More recently, PES schemes have been developed to address market failures where ecosystem services are 'public goods' or ecosystem services lye outside of normal market transactions.

Four main ecosystem services are being covered by PES schemes around the world today:

- watershed services
- carbon sequestration
- landscape beauty
- biodiversity conservation

For PES schemes to be implemented effectively, it's important to:

- create mechanisms for valuing (or at least measuring) services that are not currently valued by markets
- identify how additional amounts of these services can be provided in a more cost-effective way
- decide which farmers to compensate for providing more of these services
- determine how much to pay them

Many existing PES schemes do not satisfy these conditions. Among the most common shortcomings are:

- they fail to yield positive social benefits
- they fail to identify and pay for additional measures (instead they pay for the adoption of practices that would have been adopted anyway)
- they allow leakage, meaning that environmental damage is indirectly done to other areas
- they fail to generate the resources required to maintain incentives to service providers

In principle, it should be possible to estimate the marginal benefit of the introduction of a PES scheme, known as the measure of the ecosystem output (what the scheme is supposed to produce). In practice, however, since most PES schemes focus on incentives to change land use rather than incentives to change ecosystem service output, there are few effective measures of output. In the absence of satisfactory measures of output, the only way to evaluate the potential efficiency of a PES scheme is to look at how the scheme works, basically its design and process.

**Source**: Rodrigo Arriagada and Charles Perrings, Making Payments for Ecosystem Services Work, UNEP, August 2009