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Cost-effective monitoring of Payments for Environmental Services

To encourage protection of the environment, payments for environmental services (PES) schemes offer direct incentives to individuals and communities to maintain or improve the provision of environmental services. A recent study suggests indicators to monitor PES must be chosen very carefully to help ensure that monitoring does not cost more than the payments themselves.

The outcomes of PES, i.e. the actual delivery of environmental services, must be monitored to evaluate a PES programme's success. This issue has been explored further in a study that developed a framework to help planners design a monitoring system for a PES scheme intended to protect threatened species.

The framework identifies three major choices which need to be made: which indicators to monitor (e.g. the species of concern itself, the evolution of threats to the species, habitat changes or the presence of positive actions); how to monitor the chosen indicators (e.g. on ground work or by remote sensing); and how to use the indicators and monitoring results to determine payments (e.g. the presence or absence of an indicator, following the trend of the indicator over time, detecting delivery differences between monitored sites, or the achievement of targets).

To test the framework, and to investigate the amount of effort required to effectively monitor species of interest, the researchers used a well-established biodiversity PES scheme in Madagascar as a case study. Local communities are paid to protect forest habitat critical to the survival of many species, including several threatened with extinction. The total payment is divided between communities according to the presence of certain common and rare plant and animal species, threats (e.g. clearing trees for shifting cultivation) and on indicators of positive action, such as evidence of good governance. Monitoring of the chosen indicators is carried out on annual walks through the forest along pathways controlled by the communities. The locations of these routes change every year.

For each of the four community forests, the researchers undertook 40 different monitoring walks to record the presence of indicator species and threats. The collected data was then used to estimate the effect of greater monitoring efforts (i.e. more monitoring routes) and determine which indicators were most effective in detecting changes or differences in either species presence or threats among the four forests.

Even after 40 monitoring walks, rare species were not observed often enough to be able to compare changes in species presence over time. Consequently, payments based on monitoring individual rare species may not be possible without more being spent on the monitoring than is available for distributing among the communities as payments. The authors suggest that this is likely to occur in any case where the environmental service is rare, or costly to monitor. In the event that it is not possible to measure the environmental service or good that the scheme pays for directly in a cost effective manner, it may be more preferable to make payments on the basis of other indirect indicators, such as behaviours that are presumed to lead to environmental service provision, or indices of multiple indicators (payment by effort rather than by results).

Source: Sommerville, M. M., Milner-Gulland, E. J., Jones J. P.G. (2011) The challenge of monitoring biodiversity in payment for environmental service interventions. *Biological Conservation*. 144: 2832–2841

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