ALTERNATIVES TO PES FOR SECURING DELIVERY OF ENVIRONMENTAL SERVICES

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Introduction

Environmental services can be thought of simply as positive externalities: benefits that accrue to people who do not pay for them, supplied by people who are not compensated for doing so. This helps explain why environmental services are often undersupplied and why there is interest in developing mechanisms to secure their delivery.

A variety of approaches

Payment for environmental services is an innovative approach to encourage the provision of environmental services and curb negative environmental externalities like water pollution or destruction of biodiversity. However, by no means is PES the only approach; in fact, it is simply a new approach and one of many available tools available to encourage private land users to provide environmental services. Other approaches include moral suasion and social conventions, regulatory limits and economic penalties, taxes on negative externalities, tradable environmental allowances (permits for negative externalities), investment subsidies, indirect incentives, mergers, changing and/or strengthening property rights and liability systems, and facilitating negotiation and conflict resolution. Many of these approaches can be – and typically are –used in combination. These approaches can be evaluated on the basis of a number of criteria. The choice of criteria is subjective, but a potentially useful set of criteria follows.

Cost-effective and administratively feasible. Solving the problem in a way that is administratively feasible, with low transaction costs, is essential. If transaction costs are too high, the solution may be impractical or more costly than alternatives.

Direct. Economic theory predicts that the more directly a problem is addressed, the fewer side effects with unintended consequences that would raise the cost of the effort or create problems.

Creates strong incentive to comply. Ensuring compliance is essential. Mechanisms that are easily monitored or self-monitoring are the most feasible and cost-effective.

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Requires actual compliance. This refers essentially to the conditionality clause of PES, whereby payments are conditional on compliance with the desired environmental outcomes.

Has long-term impact. Favorable approaches should continue to work well over time. Short-term fixes with little long-term effect help explain the long-term ineffectiveness of many natural resource management projects. That said, any instrument (including PES) can be used as part of a transitional strategy to a more sustainable system.

Protects poor people's livelihoods. Given high poverty rates in the world and the stated objective of alleviating poverty, helping poor people or at least not hurting them is essential.

Does not concentrate costs on a particular group. If some people bear disproportionate costs, they may actively undermine efforts to secure environmental services.

Different approaches for securing environmental services (or internalizing externalities) tend to perform better against some criteria than others, so tradeoffs are inevitable. The most common tradeoff concerns potential effectiveness versus administrative feasibility.

Moral suasion and social conventions. Moral suasion encourages private individuals to internalize negative environmental externalities as a matter of doing the right thing. It can include public awareness programs, capacity building and training to promote voluntary changes in behavior, and to some extent a willingness to bear incremental costs to achieve environmental improvements. Moral suasion is used in most environmental programs. While it is direct, cost-effective, potentially self-enforcing, and potentially scalable, it is limited as a standalone approach, especially where it contradicts economic incentives. Changing mindsets and social norms is always a gradual process. One potential problem is that poor land users may find it difficult to absorb higher costs of alternative production systems.

Regulatory limits and economic penalties. This approach includes conventional command-and-control systems for air or water pollution, particularly for highly toxic pollution. This approach has been used for requiring soil conservation investments, prohibiting cultivation on steep slopes, and evicting people from wildlife sanctuaries. Command and control is a very direct approach, and fines and other penalties can induce compliance. It can be hard on the poor if their land uses are restricted. Incentives for compliance are high only with effective monitoring and enforcement. In developing countries, weak monitoring and enforcement can undermine this approach, especially in rural areas where regulatory capacity is limited.

Taxes on negative externalities. Another approach is for the government to introduce corrective taxes that alter the incentives for activities that cause externalities. Taxes increase the private costs of the activity to reflect the social costs imposed on others. A tax equal to the marginal cost of environmental damage from the externality raises the cost of production, causing an increase in price and reduction in demand. Production will decline to match the change in demand, thus reducing environmental damage. Taxes raised can then support improved monitoring and enforcement in a regulatory command-and-control system. A tax on negative externalities follows the "polluter pays" principle as opposed to banning the polluting activity. This approach works in theory, for it is direct and conditional; but it is not practical as a matter of widespread policy in rural areas of developing countries because equating the tax with the externality is difficult. On the other hand, it is somewhat analogous to user fees for scarce natural resources where overuse risks degradation and externalities. The latter is sometimes used at local levels in rural developing country contexts.

Tradable environmental allowances (permits for negative externalities). In this approach, the responsible authority sets a target level of allowable emissions based on an ambient environmental quality standard in a given geographic area. Discharge rights equivalent to the total allowable emissions are allotted or auctioned to individuals or companies through permits allowing the owner to discharge a specified amount of pollution. Anyone producing emissions below the permit allocation through improved environmental management or reduced production can then sell the excess pollution rights to others who wish to exceed their emissions allocation. In this approach, unlike taxes and subsidies, authorities do not need to estimate private marginal abatement costs and set an efficient tax or fee. With tradable permits, the market determines the optimal price for a unit of emissions. This approach has shown great success in reducing sulfur dioxide emissions from U.S. power plants and has been integrated into the Kyoto Protocol It contains an element of PES in that high polluters can pay others to secure environmental services on their behalf. At the local level, it is analogous to approaches where households are given permits to use scarce natural resources and can trade those permits with others with higher demand for them. It is both direct and conditional but not universally applicable.

Investment subsidies. Subsidies have long been used to change behavior and encourage adoption of alternative management practices. For example, subsidies to adopt soil conservation or plant trees are common in government programs worldwide. Given an initial lack of congruence between private and social gain, subsidies aim to ensure that the private benefit (including the subsidy payment) exceeds the private cost. Subsidies for soil conservation and afforestation have a poor performance record because the payments encourage initial adoption but not continued maintenance of the environmentally favorable behavior. Everyone is familiar with examples where trees are planted under a program subsidy but then do not survive. Subsidies are direct but lack of conditionality limits their effectiveness.

Indirect incentives. Indirect incentives are often used in natural resource management projects in the form of food, employment, provision of inputs, access to credit, and rights to use other resources. After the widespread failure of regulatory approaches to protect natural areas, beginning in the late 1980s new programs offered local people development benefits in exchange for protecting nearby natural areas. Called Integrated Conservation and Development Programs (ICDPs), they aimed to develop other livelihood sources and make exploitation of natural resources less attractive. This approach has not enjoyed widespread success, likely because it is neither direct nor conditional. In particular, short-term project employment and various non-land-based development measures such as skills training and credit provision have no conceptual link to beneficiaries' natural resource-use decision. As with subsidies, they lack conditionality and may even encourage in-migration that only adds to the pressure on the resource in question. This approach can help the poor but without securing environmental services.

Mergers. The classic textbook example of externalities involves a paper mill on a river that pollutes a fishery downstream. If both economic activities were merged or undertaken by a common owner, the joint production decisions would account for the impact of mill water pollution on fish production. An efficient solution would have the marginal cost of pollution abatement equal the marginal benefits of improved fish production; the externality would be internalized because the owner would bear the cost of all pollution. While a pure merger is unrealistic in most settings, a simpler version of the same idea is to share the costs and benefits that come from providing the environmental service. The Sukhomajri watershed in India is an unusual example in which this approach has worked. This approach is closely analogous to PES. It is direct, but it is only conditional if the potential losers have some sway over the potential winners so that they can stake their claim. It can work if benefits are high enough that there is plenty to go around.

Changing and/or strengthening property rights and liability systems. The creation and enforcement of efficient property rights can contribute to internalizing externalities if coupled with an effective legal system where damage from off-site third parties can be addressed through the courts. This system certainly works to some degree in most developed countries. However, in many developing countries, property rights in rural areas are poorly established. Further, the legal system may not be robust, objective, or above corruption. In any case, strengthened property rights and liability systems can be a strong component of any natural resource management strategy.

Facilitating negotiation and conflict resolution. In many local settings, securing the delivery of environmental services requires resolving conflicts and negotiating solutions above all. Third parties may be able to facilitate these processes, taking care to protect the interest of weaker parties that may not be able to negotiate for themselves. This is commonly a component of natural resource management programs around the world.

An example from watershed projects in India

India's national watershed management program invests nearly $1 billion annually. The most widespread approaches for encouraging provision of watershed services are investment subsidies and indirect benefits such as temporary employment. Less common approaches, more frequently pursued by the best NGOs, are moral suasion, building local organizational capacity and facilitating negotiation, and locally implemented restrictions, fines, and user fees. Adaptations of PES and mergers are found only rarely. Key points regarding these approaches and their application in India follow.

Awareness and moral suasion are always favorable components but insufficient on their own.

Effectiveness and scalability often are inversely related. Investment subsidies and indirect benefits such as project employment are administratively simple and easily scalable but ineffective. Mergers, payment for environmental services, cap and trade, and negotiation among affected parties are potentially effective but less scalable due to high transaction costs. Exceptions to this inverse relationship are moral suasion and strengthening legal systems, both of which can be achieved only gradually.

Employment and investment subsidy approaches are the most commonly used in Indian watershed projects. This appears to result directly from their being more easily administered and scaled-up compared to time-consuming investments in better planning, training, and negotiation that better address externalities.

Making payments performance-based could be a critically important innovation. Subsidies for conservation are direct and scalable, but they are unlikely to be effective unless they are contingent on performance. Payments linked to whether a pasture is being regenerated or trees are growing would be feasible and could be monitored through remote sensing. This would make subsidies more like PES. One challenge is that many Indian watershed projects double as employment programs for which funding could not be linked to performance.

Internalizing watershed externalities while helping the poor is difficult. The poor appear to gain in the short term from approaches like project employment, but this does not effectively address watershed externalities. Approaches that best address externalities have little effect on the poor and are difficult to implement. Legal support will be needed for some of the more innovative approaches such as various forms of mergers, which could help the poor but only if net benefits are sufficient to go around.

Greater local institutional capacity helps all approaches, so continued efforts to strengthen organizational skills and local governance systems, and facilitate negotiation are helpful. These are major focal areas of many rural development programs in India.

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