

Green Payments Policy

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Introduction

Green payments, or government expenditures to farmers and ranchers for the provision of environmental services, is gaining supporters either as an addition to, or as a substitute for, income support. A recent example is the proposed federal Conservation Security Act (CSA) of 2000 (introduced by Senator Harkin and Congressman Minge). The CSA, which would provide payments to any farmer and rancher willing to implement a conservation plan, is currently being debated as one option for farm bill payments.

Agricultural enterprises, if managed well, can provide a broad array of environmental services: specifically, habitat services, ecological services, and amenity services (Bromley, 1997). These services are not mutually exclusive, each rely on the others. Adequate habitat provides the necessary conditions for the well-being of animals and plants that are not already part of the agricultural enterprise. Examples are wild game, waterfowl, and a broad range of native plants. Ecological services are those attributes of the farm or its management that affect the functioning of a healthy ecosystem. For example, the careful protection of an on-farm wetland can provide

important buffering and filtering effects that ultimately lead to cleaner water in nearby streams or which can provide flood control. Or, the building of soil quality can provide a carbon sink to aid in ameliorating global climate warming. Amenity services are those that stem from maintaining farms and ranches so that they provide a visually appealing component in the rural landscape. These landscapes can in turn provide recreation and tourism opportunities. Agricultural producers, regardless of management capability, have few financial incentives to either maintain beneficial services or to mitigate adverse environmental impacts. Green payments could provide these incentives if properly designed.

Green payments are sometimes referred to by the European expression of “multi- functionality”, where producers are paid for their production of environmental, cultural, or social attributes. Examples might include the preservation of historic buildings, the provision of wildlife corridors, or even the production of a regional cheese. The use of the term, green payments, in the United States usually only refers to the environmental services from agriculture. One considerable appeal of green payments is that paying farmers and ranchers to produce such services—as opposed to paying them for commodity production—should not violate trade agreements (as interpreted by the World Trade Organization (WTO)) as long as

they have minimal distortions on production and trade (Ervin, 1999).

Green payments are not a new concept. Traditional state and federal agro-environmental programs such as the Conservation Reserve Program (CRP), the Wetlands Reserve Program (WRP), and the Environmental Quality Incentives Program (EQIP) are examples of green payment programs. However, with the exception of the CRP, none of these programs is really designed to transfer a significant amount of income (USDA-ERS, 1997). For instance, EQIP is a relatively small program of only \$200 million per year, and it provides only limited cost sharing. Together, these programs have been successful in reducing cropland erosion, restoring wetland acreage, and in improving wildlife habitat (USDA-ERS, 1997). However, the cost-effectiveness of these programs in achieving environmental outcomes is questionable. For example, the use of CRP as a land retirement approach is seen as a relatively expensive way of achieving environmental benefits (USDA-ERS, 1997; Claassen, et. al., 2001). Moreover, agriculture continues to confront important environmental problems, particularly water pollution from nutrient runoff.

The design of green payments is challenging. Agro-environmental problems are complex: involving management practices on specific farms and their effects on environmental services. These effects are not always well understood. Although knowledge is growing, the science linking farm and ranch practices to environmental outcomes is fragmented and incomplete.

It is known, however, that there are a number of characteristics that complicate the design of any green payments program: (1) multiple contributors to agro-environmental services, (2) difficulty in observing and/or measuring impacts, (3) heterogeneity in underlying conditions, and (4) unpredictability of natural events (Claassen and Horan, 2000). The nature of agro-environmental services is that significantly enhancing the environmental management on one farm may not appreciably impact environmental services; frequently, many farms must improve their environmental management to achieve improvements.

As a result, it is difficult to measure and monitor individual contributions to agro-environmental services. Furthermore, agriculture is extremely diverse, with crops, management practices, topography and weather varying widely among regions. There is an uneven distribution in the location of environmental problems. This diversity means that a “one-size-fits-all” policy is not likely to be as effective in enhancing environmental services as would a more targeted policy. Finally, many agro-environmental problems are subject to significant variations as seasons change or as extreme storm events take place. There can be more variation in off-farm runoff, for example, from variations in climate than from variations in farm practices, although properly chosen practices can often reduce the adverse impacts of extreme weather events (Claassen and Horan, 2000).

Issues

Because of the complexity of agro-environmental services, there are many issues to be resolved in designing a green payment program (Heimlich, 1994; Claassen, et. al., 2001). These issues include:

- **What is the objective of the program?** Is the objective only the enhancement of environmental services or are farm income support and other program objectives also important? What are the inherent tradeoffs between income support and environmental objectives? What environmental services are to be the focus of the program? How are these services to be measured? Will there be different objectives for different regions or enterprises?
- **Who should be paid?** Who is eligible? Should payments go to areas of intensive agricultural production or to areas where the provision of the services affect many people and/or have significant environmental impacts? Should payments be targeted, and what selection criteria should be used? What land should be targeted: those with significant actual or significant

potential environment problems? Or, should certain regions or types of crops be targeted?

- **How much will farmers and ranchers be paid?** Will payments exceed producer costs? Will payments vary spatially? Will total payment amounts be limited?
- **What should farmers and ranchers be paid to do?** Should payments be based on performance (e.g., on a set of criteria that combine several environmental services, perhaps based on an environmental impact index), on the adoption of specific management practices, or on a whole farm conservation plan? What is the appropriate baseline from which to evaluate payments? Should payments be made only for improvements from the status quo, or for past stewardship? Will constraints be imposed on which lands are eligible for payments? How should compliance with green payment requirements be monitored and enforced?

All of these issues are important for the overall design of green payments and the determination of the ultimate beneficiaries of the program.

Alternatives and Consequences

There are many green payment policy alternatives — each incorporating different answers to the questions posed above. Each choice involves tradeoffs and will result in a different distribution of payments. For example, if income support objectives are combined with the objective of providing environmental services, there will be a different geography of payments than if the only objective were the provision of environmental services.

A program targeted to only environmental objectives would be more cost-effective in providing specific environmental services than one with the dual objectives of both income support and the provision of

environmental services. But targeting a single environmental service will not necessarily address problems stemming from other environmental services (Claassen, et. al., 2001). A different policy alternative therefore is to use some measure of *multiple* environmental services to determine eligibility for payments. Another policy is to make all farmers and ranchers eligible to receive green payments—say for adopting a whole farm or ranch conservation plan. However, providing green payments to all farmers and ranchers regardless of their land's impact on environmental services significantly increases the taxpayer costs of providing environmental services and greatly increases enforcement and administrative costs. Cost-effectiveness criteria suggests a need for targeting broadly enough for impact, but not so broadly as to dilute the effectiveness of the program.

Cost-effectiveness can be further enhanced if compliance is measured by environmental outcomes, at least in those instances where such outcomes can be observed and measured. Where such outcomes are not easily measured, the most cost-effective approach is to provide payments for those changes in practices most highly correlated with the provision of environmental services. However, payments based on improved outcomes requires agencies to have a considerable amount of information and may involve significant costs for planning and enforcement. Furthermore, farmers and ranchers may find such an approach inequitable because those adopting the same practices may not receive the same payments.

An alternative would be to pay farmers and ranchers uniformly for using certain practices. Supporters of such an approach may claim that uniform payments may lower program administration costs and would appear to be more equitable. However, such arguments may be misleading. First, uniform payments reduce overall cost-effectiveness because they encourage farmers with little environmental impacts and/or high costs to over-supply environmental services, while farmers with large environmental impacts and/or low costs would not have incentives to supply enough environmental services. Second, such a program may reduce the flexibility of producers to select the least cost environmental management technique. Combined

with the fact that adoption of certain practices may not always result in the provision of the desired environmental services, the effect would be to increase the costs of providing environmental services. Finally, there is evidence that uniform payments could actually increase the divergence in the returns to agricultural landowners (Claassen and Horan 2001).

In all cases, the selection of the appropriate baseline from which to measure changes will be critical in affecting both program participation and the level of income transfers. Program participation and the level of income transfer will be smaller if the baseline is too stringent. However, too lax a baseline could cause some producers to be paid for doing things they should already be doing, implicitly penalizing those who have already taken steps to provide environmental services (Baumol and Oates). That is, the good steward producer might not receive any green payments, since he or she is already adequately providing environmental services. Also, too lax a baseline could create an opportunity for “moral hazard”—that is, to create agro-environmental problems in order to be compensated for ameliorating them.

To be cost-effective, farmers and ranchers should receive enough in the way of payments to offset any opportunity costs they incurred with respect to the provision of the payments. Determining the level of payments (which depend on both payment rates and also the baseline from which payments are evaluated) that motivates changes that would not otherwise have taken place (Batie, 1994) and which neither over- nor under-compensates the farmer or rancher is difficult.

Summary

Developed countries, including Japan and those of the European Union, are moving toward green payment programs as a WTO-legal way to protect environmental and cultural services from agriculture. The United States is now scrutinizing the concept. However, what on the surface appears to be a relatively simple concept of paying farmers and

ranchers to provide environmental services, is actually quite complex.

There are four fundamental issues with respect to program design.

- What are the objectives of the program?
- Who should be paid?
- How much should they be paid?
- What should farmers and ranchers be paid to do?

The answers to these questions are crucial in determining not only the cost-effectiveness of the program and the geography of the payments, but also in determining the actual obtainment of the enhancement of environmental services.

References and Suggested Readings

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