The United Kingdom's Experience with Agri-environmental Stewardship Schemes: Lessons and Issues for the United States and Europe

by

Thomas L. Dobbs and Jules N. Pretty*

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*Dobbs is Professor of Agricultural Economics at South Dakota State University, in the US, and Pretty is Professor and Director of the Centre for Environment and Society at the University of Essex, in England.

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Thomas L. Dobbs and Jules N. Pretty[1]

Agricultural policy makers on both sides of the Atlantic are now faced with fundamental pressures and choices about farming and the environment. Member states of the European Union (EU) are attempting to shape new policies in implementation of the Agenda 2000 reforms of the Common Agricultural Policy (CAP), and the US is beginning active debate on a new farm bill. On the European side of the Atlantic, Agenda 2000 reforms are being influenced heavily by the concept of '*multifunctionality'*. The Rural Development Regulation, essentially a second CAP pillar, allows EU member states to shift some of their CAP funds to rural development and agri-environmental programs. Consequently, there is likely to be major expansion of *environmental stewardship* programs in Europe as EU members redirect funds from commodity support programs to programs more directly supportive of environmental and rural development objectives. The United Kingdom (UK) government, for example, plans to shift 2.5% of all direct payments to farmers under CAP commodity regimes to rural development and agri-environment initiatives in 2001, with this proportion to rise gradually to 4.5% in 2005 and 2006 (MAFF, 1999, p. 5). France is being more progressive, with a shift of 20% into its Rural Development Regulation budget.

Discussion of such funding shifts to agri-environmental programs is less advanced on the US side of the Atlantic. However, some agricultural policy proposals are beginning to move in this direction. The Conservation Security Program (CSP) advocated by Senator Harkin, of Iowa, and others is perhaps the best recent example of a *stewardship payment* program-type proposal. That proposed program, consisting of several tiers of payments to farmers for different levels of conservation, would go considerably beyond programs such as the Environmental Quality Incentives Program (EQIP) and its predecessors.

In this paper, we draw on our recent review of agri-environmental programs in the UK (and comparison to programs in the US) to examine key issues associated with a major expansion of *stewardship payment* programs on both sides of the Atlantic.[2] First, we briefly describe the concept of *multifunctionality* that is now driving dialogue in Europe on the next generation of agricultural and

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[1] Dobbs is Professor of Agricultural Economics at South Dakota State University and Pretty is Professor and Director of the Centre for Environment and Society at the University of Essex, in England. Research for this paper was conducted while Dobbs was a visiting Fulbright Scholar at the Centre from January to July 2000.

[2] A major report, covering our review of the major agri-environmental programs carried out in the UK since the mid-1980s, is now in the final review and revision stage. This report, titled "Future Directions for Joint Agricultural-Environmental Policies: Implications of the United Kingdom Experience for Europe and the United States", will be released as a joint publication of South Dakota State University (in the US) and the University of Essex (in the UK).

environmental policies. Then we briefly describe our proposal for a major new agri-environmental initiative to promote legume-based rotations in arable (crop) areas. The main body of the paper is then devoted to an examination of key issues and challenges associated with a major expansion of *stewardship payment* programs on both sides of the Atlantic.

Multifunctionality

Agriculture is inherently multifunctional[3]—it does more than just produce food, fiber, oil and timber (FAO, 1999; Whitby, 2000). It has a profound impact on many other aspects of local, national, and global economies and ecosystems. These side-effects can be either positive or negative.

An agriculture that depletes organic matter or erodes soil while producing food externalizes costs that others in society must bear; but one that sequesters carbon in soils through organic matter accumulation contributes to both the global good by mediating climate change and the private good by enhancing soil health. Similarly, a diverse agricultural system that protects and enhances on-farm wildlife for pest and disease control contributes to wider stocks of biodiversity, while simplified modernized systems that eliminate wildlife do not. And agricultural systems that offer labor-absorption opportunities—through resource improvements or value-added activities—can help to encourage rural economic growth.

But agriculture's multifunctionality also suggests that it can deliver valued non-food functions that cannot be produced by other economic sectors. Much of the 'natural' biodiversity in Europe is the result of centuries of farming, and agriculture has created and shaped the landscape and countryside. There are many other positive side-effects of agriculture, including values derived from aesthetic value; recreation and amenity; water accumulation and supply; nutrient recycling and fixation; wildlife, including agriculturally beneficial organisms; storm protection and flood control; and carbon sequestration by trees and soils. Positive social externalities include provision of jobs, contributions to the local economy and opportunities for businesses, and contributions to the social fabric of rural communities (OECD, 1997; PIU, 1999).

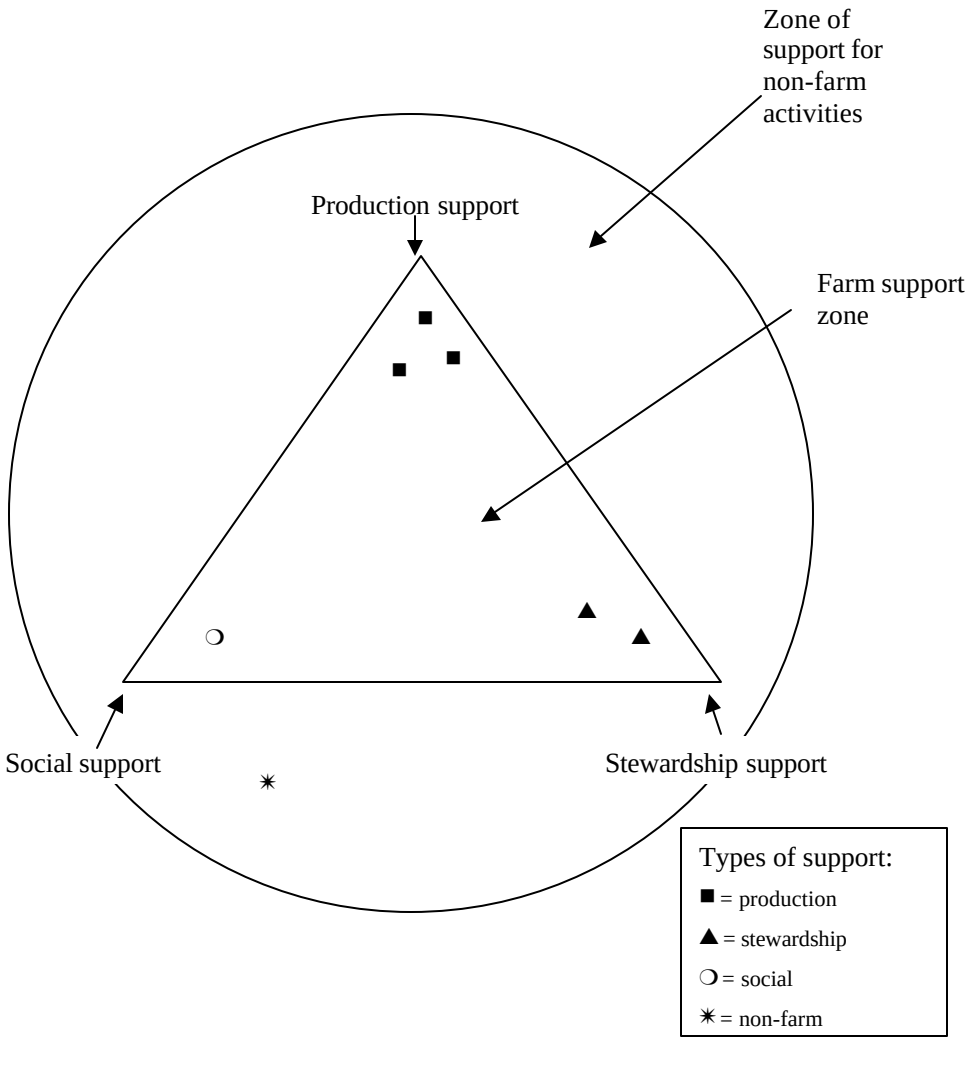
Several major issues and challenges face policy makers in their attempts to restructure agricultural support based on the `multifunctionality' perspective. The movement of multifunctionality to center-stage in EU agricultural policy discussions implies that income support to farmers will increasingly be tied to stewardship and social objectives, rather than to the production objectives that dominated from the 1940s to the late 1980s. However, agricultural policies often do not serve just one public policy

[3] We recognize the contested nature of the term "multifunctionality" in present international negotiations. However, we use the term here simply to illustrate that agriculture has many side-effects or functions; it jointly produces many services; it has many purposes (multi-purpose).

objective. Figure 1 can be used to illustrate the point that different agricultural policies rest along a continuum. Some policies serve primarily to support food and fiber production objectives, some support primarily stewardship (environmental and ecological) objectives, and others are intended to support particular social objectives. In addition, some policies are designed explicitly to support a combination of two or all three of these objectives. The challenge with which we are concerned here is how to make the transition from policies clustered at the top of the triangle in Figure 1 (production support) to policies closer to the lower right-hand corner (stewardship support).

As we think about that challenge, it is useful to consider exactly what kinds of policies tend to be clustered in the different corners of Figure 1. Major examples are listed in Table 1. Various kinds of grain

Figure 1. Location of agricultural/rural support according to production, stewardship, and social objectives



and oilseed price supports that were used in the EU and the US during the last half of the twentieth century clearly served primarily to increase food and fiber production. Livestock headage payments in the EU also have been explicitly tied to levels of production. The US `deficiency payment' policy of the 1980s and early 1990s, based on the differences between target prices and market prices of various commodities, had the social objective of supporting farmers' incomes but was still closely tied to production. US crop insurance schemes in the 1980s and 1990s, and income insurance schemes that began to be piloted in the late 1990s, represent some movement along the continuum from production support toward social support; however, unless very carefully designed, they risk being tied primarily to levels of production of particular commodities. The EU's area payments, under the Arable Area Payments Scheme, are less tied to production than have been its price support policies, but they still tend to be closer to the production end of the triangle in Figure 1 than to the social or stewardship ends.

Table 1. Typology of public policies/schemes according to primary objective supported

Policy objective with which the policy/scheme is most closely connected			
Production support	**Stewardship support (* = UK schemes)**	**Social support**	**Support for non- farm activities**
Price supports	Organic Farming Scheme*	Fully decoupled income support payments	Support for rural infrastructure
Livestock headage payments	Tir Gofal*	Beginning "small- farmer" loans	
Deficiency payments	Arable Stewardship scheme*	"Capping" price or income support by farm size or income	Education in rural areas
Crop insurance	Norfolk Area Land Management Initiative*	Support for farmers' markets	Rural health care
Income insurance	Countryside Stewardship Scheme*		
	Environmentally Sensitive Areas Scheme*		
Area payments	Countryside Premium Scheme*		
	Integrated farming schemes*		
	Nitrogen Sensitive Areas Scheme*		
	Landcare (Australia)		
	Conservation compliance		

We have examined a host of policies that emerged in the UK during the 1980s and 1990s that are clustered closer to the stewardship support corner of the triangle (Figure 1 and Table 1). The Organic Farming Scheme and its predecessor, the Organic Aid Scheme, clearly have been tied to particular

stewardship farming systems. So have other schemes in the UK, including Tir Gofal in Wales. As we read down the stewardship support column in Table 1, the policies listed are still primarily related to stewardship support but some have social or production elements, as well. Australia's National Landcare Programme, for example, is aimed primarily at society's stewardship concerns, but it also has strong social support elements. The 4,500 farmer groups formed in the past decade, comprising one-third of all Australian farmers, have effected remarkable environmental transformations as well as social ones. `Conservation compliance', as incorporated in US farm policy in the US since the mid-1980s, has been aimed at stewardship support, but has not been designed to fundamentally alter basic production systems; therefore, we can envision that policy as being somewhere on the continuum between the production and stewardship corners of the triangle in Figure 1.

US farm policy since the 1930s has always been wrapped in rhetoric of social support, particularly for the `Jeffersonian' ideal of `family farms'. There appears to have been greater attempt to integrate production support and social support in the US than there has been in the UK. US efforts to maintain or raise farm income through schemes tied primarily to production, in combination with farm lending and other schemes, may genuinely have helped moderate-sized family farms until about the early 1950s. However, in spite of various supposed payment limitations that existed throughout most of the last half of the twentieth century, US production support policies probably have done as much—or possibly more—to undermine moderate-sized `family farms' as to support them.

As interest in sustainable agriculture has increased in the US, since the 1980s, stewardship and social concerns have been closely intertwined—more so than apparently has been the case in the UK. Most US sustainable agriculture `advocates' see stewardship and family farm-based social policies to be mutually reinforcing. They believe that moderate-sized, owner-operated family farms are the kind most compatible with ecologically-based farming systems. If that belief is correct, then though some policies may be intended primarily for stewardship purposes, others primarily for social purposes (e.g., preservation of family farms), and still others for a combination of those purposes, there will not always be tradeoffs as we move along the continuum between the social and stewardship corners in Figure 1.

An important element in the emerging EU multifunctionality debates is support for rural development that is more broadly-based than on-farm activities alone. These `non-farm' rural development activities are represented by the space outside the triangle but within the circle in Figure 1. A few broad examples of such activities are listed in the last column of Table 1. The first example in that list consists of government support for communications, waste treatment, and other kinds of physical infrastructure that make living and operating non-farm businesses in rural areas attractive and affordable. Non-farm businesses include ones related to agriculture, such as food processing operations. The other

two examples listed consist of support for human and social capital related to education and health care in rural areas.

Legume-based Rotations

UK agri-environmental schemes such as the Environmentally Sensitive Areas (ESA) scheme and the Countryside Stewardship Scheme (CSS) have contributed greatly to 'greening the edges' of Britain's agriculture. Losses of bird habitat, historic features (e.g., hedgerows), and natural and scenic landscapes have been substantially reduced. Special schemes such as those for reducing nitrate contamination also have reduced negative externalities. Where most of these schemes fall short—as have agri-environmental schemes in the US—is in restoring the biodiversity that was lost during the 20th century. Where mixed crop-livestock farming has dramatically decreased and crop systems have narrowed to two or three main cash crops, the schemes have either not attempted or failed to restore much diversity. The failure to complete 'decoupling' in farm policy is at least part of the reason. However, we recommend an aggressive government effort to restore legume-based rotations in arable areas.

We call for the creation of a Natural Capital for Food Security Fund to help underwrite this effort in the UK. Such a scheme would have multiple benefits, one of which is the reduction of externalities caused by high application rates of synthetic chemical fertilizers and pesticides (Pretty et al., 2000). Another benefit is a reduction in soil erosion and related productivity losses and external costs. Most analyses show that deterioration of natural capital in the form of soil can only be effectively tackled through public subsidies if schemes are to be voluntary, because the costs of effective soil conservation measures generally exceed the private benefits to farmers (Whitby and Adger, 1996, pp. 56-59). A third benefit is the wildlife habitat provided by a more biologically diverse crop rotation. Supplies of some crops presently deemed to be in 'surplus' also could be reduced, when rotations systematically make room for forage or green manure legumes, thereby somewhat strengthening market prices. Finally, preserving soil's natural capital by farming less intensively adds to a nation's true food security, in a way consistent with ideas raised by Sturgess (1992, p. 324) in his 1992 Presidential Address to the Agricultural Economics Society (UK).

An agri-environmental scheme such as this to promote legume-based rotations in arable (cropping) areas also is needed in the US Midwest and Great Plains. Multiple benefits similar to those listed above for the UK would be forthcoming. In fact, putting legume-based rotations at `the heart of agri-environmental policy for the US, Canada, and the entire EU could provide the basis for consensus on a major new direction. Because it is a 'back to basics', common sense ecological approach, it really should not be all that controversial, in principle. Much of the political controversy, at least, would be

removed if this were adopted as a multi-lateral approach—simultaneously pursued on both sides of the Atlantic. The old argument about the 'playing field not being level' would be muted.

Stewardship Payment Program Issues and Challenges

Several major issues and challenges are emerging as governments attempt to broaden the emphasis on *stewardship payment programs* within a *multifunctionality* policy framework. In the following sections we examine some of the issues and challenges that will arise in attempts to shape systems of stewardship payments covering a range of practices and systems, including legume-based rotations.

Compatibility of Production Support and Stewardship Support

It is quite clear that much remains to be done to complete the 'decoupling' of income support for farmers from production. Although there have been significant first steps in decoupling under the EU's CAP and the US's 1996 Farm Bill, strong incentives remain for farmers in the main arable areas to continue farming intensively in both the UK and the US. Farmers in the UK's arable regions still benefit too much from production-related CAP supports to take up the higher tiers of agri-environmental schemes, and to diversify with crop rotations. The same is true in the US Corn Belt, where farmers have adopted many 'Best Management Practices' but they are still too tied to production-related price supports to diversify out of the narrow and inherently chemical-intensive corn-soybean rotation. We are not optimistic about prospects truly to 'green the middle' of arable areas unless and until policy makers are willing to complete the decoupling of farm income supports from production. The irony is that if the decoupling process were completed, not only would stewardship objectives be more easily achieved, but so would purported social objectives such as maintaining a moderate-sized, 'family farm' agricultural structure.

Well-intended calls for stronger `safety nets', both in the UK and the US, tend to venture onto a slippery slope towards the area of production support. In an otherwise generally excellent discussion of policy options for UK agriculture, a recent report of the Royal Agricultural Society of England (RASE) justifies the need for a stronger safety net system, but is vague about how such a safety net would be constituted. The report states that *"any safety net should set a floor or minimum price, but is by definition coupled to production"* (RASE, 2000, p. 17). Authors of the RASE report (pp. 17-18) suggest the possibility of using crop and revenue insurance schemes like those being tried in the US, to strengthen the safety net for UK farmers as conventional CAP price supports are phased out. However, those schemes also can inadvertently encourage overly specialized production systems if coverage is too narrow or

premium subsidies are too high for particular crop or livestock enterprises.

Another option mentioned in the RASE report (pp. 13-14)—to support social and stewardship objectives while avoiding ties to production of agricultural commodities—is for the government to pay farmers a `salary' (e.g., £20,000/year). In return, farmers would be expected to manage their land for `environmental purposes'. The idea would be simultaneously to accomplish environmental objectives and the social objective of keeping people in rural communities. Willard Cochrane, the highly respected, long-time agricultural policy economist at the University of Minnesota, has proposed a similar policy for the US. He recommends that the US government provide a cash subsidy of $15,000-$25,000 for all `family farms'. This subsidy would not be tied to production of particular commodities. The purpose would be to maintain a structure of agriculture in the US in which small- and moderate-sized farms could compete with larger `industrialized' farms. These family farmers, in Cochrane's view, have key roles to play in programs of sustainable agriculture (Cochrane, 2000, pp. 11-12). They also contribute to the viability of rural communities at large (Goldschmidt, 1978; Labao, 1990).

Potter and Goodwin (1998) stress that merely abandoning production supports is unlikely to accomplish the range of stewardship objectives desired in Europe. It could, indeed, lead to less intensive production (at least after a time), thereby reducing negative externalities related to chemical fertilizer and pesticide use in some areas, for example. However, the overall effects on the range of features that Europeans desire in their managed agricultural landscapes are less clear. Most of the beauty and biodiversity of landscapes in the UK and elsewhere in continental Europe depends on the continuation of active farming. It is restoration or maintenance of a certain kind of farming that is desired in Europe, not the kind of extensification that would amount to abandonment of farming. The desertification of rural areas in southern Europe in the past decade or so has already demonstrated that this is not a desirable option. `Liberalization' of farm policy, by itself, could *"wipe out much of the human capital necessary for the effective conservation of the European countryside"* (Potter and Goodwin, 1998, p. 291). The implication is that stewardship programs are required to counterbalance some of the cost-price squeeze effects of more market-oriented farm policies.

Balancing Stewardship Payments and Environmental Compliance

A critical issue facing policy makers is what environmental standards should be required of farmers without direct compensation and for what environmental services should farmers be compensated? A three-fold categorization is likely to be the most useful in thinking about this issue (Dwyer, et al., 2000, p. 32). The base category consists of those farming practices covered by regulations. Restrictions on pesticides or on fertilizer applications in the UK's Nitrate Vulnerable Zones would be

examples. The next category consists of good practices that go beyond regulatory requirements, but for which there are no agri-environmental payment programs. Examples in England would be *"retaining traditional field boundaries, or maintaining green cover over winter on erodible soils"* (Dwyer, et al., 2000, p. 32). The third category contains practices providing environmental services that are covered by incentive-based compensation schemes. `Cross-compliance' requirements for farmers receiving CAP production support payments could be applied to practices in either of the first two categories.

The debate about which farming practices belong in each category is both philosophical and economic in nature. In the UK, managed countryside is a result of generations of farming practices, and so it is a matter of philosophical perspective whether one feels a particular agricultural practice—say, one that preserves bird habitat—constitutes avoidance of harm (and, therefore, is not `deserving' of compensation) or one feels it constitutes provision of a public service (and, hence, is `deserving' of compensation). Which perspective is taken also has economic implications in terms of government budgetary costs and agricultural competitiveness, to cite but two examples.

Environmental groups in the UK have argued that some environmental conditions should be attached to CAP support payments farmers receive; i.e., that there should be `cross-compliance' (Potter and Goodwin, 1998, p. 293; RASE, 2000, p. 15). The Cabinet Office Performance and Innovation Unit (PIU) recently recommended that the UK government should explore the possibility of conditioning CAP payments on farmers complying with certain minimum environmental standards (PIU, 1999). The UK government, as noted previously in this paper, plans a major expansion in funding for agri-environmental schemes under the new Rural Development Regulations. It also has been considering new cross-compliance measures (MAFF, 1999, p. 5).

Environmental cross-compliance in the UK currently exists in the following two areas:

> *"a) The receipt of all headage payments for beef and sheep under the Sheep Annual Premium Scheme (SAPS), Beef Special Premium Scheme (BSPS), Suckler Cow Premium Scheme (SCPS), Extensification Premium and Hill Livestock Compensatory Allowances under the Less Favoured Area (LFA) scheme, is conditional on not causing significant overgrazing of the land used by livestock upon which these payments are claimed.*
>
> *b) The receipt of Arable Area Payments, including set-aside payments, has been made conditional on farmers obeying certain conditions for the management of set-*aside *land. These are designed mainly to protect habitats and species in cropped landscapes. Conditions include the retention of traditional field boundaries adjoining set-aside land, and restrictions on the timing of certain operations on the land, including ploughing and spraying, in order to minimize damage to ground-nesting birds and other species which may breed or feed in set-aside fields."* (Dwyer et al., 2000, pp. 25-26)

Dwyer, et al. (2000, pp. 81-83) recommend that the UK government should consider several additional cross-compliance measures. One would be to reinforce key environmental regulations with cross-compliance conditions, for example regulations related to hedgerow and groundwater protection. A second measure would make it a general duty for farmers to observe major codes of `good agricultural practice' that already are in place in the UK. The third measure would be a requirement that farmers draw up a specified whole farm plan. This might consist of a whole-farm conservation plan or report similar to those of the Farming and Wildlife Advisory Group in England and Scotland. The intent, however, at this stage, would not be to require farmers to implement all of the actions suggested by such a plan. Finally, they recommend consideration of a cross-compliance measure requiring margins of specified widths around all fields eligible for Arable Area Payments.

As long as CAP support payments remain high, cross-compliance measures effectively serve as *regulations* for most farms that are eligible for payments, just as they have in the US since they were introduced with agricultural policy legislation in 1985. Therefore, environmental services brought forth as a result of cross-compliance are obtained with substantially less government budgetary cost than if they were obtained through expanded stewardship payment programs. However, if and when production-related support payments dramatically decline or disappear in the EU and the US, cross-compliance losses much or all of its leverage. (Some leverage would remain if significant *social* objective payments exist for farmers and are tied to environmental cross-compliance.) Therefore, long-range agri-environmental planning must be based on a collective vision of which environmental conditions or outputs should be obtained through regulations and which ones should be `purchased' from farmers through stewardship payments.

Opportunities for Programs to Contribute Jointly to Social and Stewardship Objectives

Are there policy opportunities to more explicitly link social and stewardship objectives? Can stewardship payment programs be designed, for example, to simultaneously strengthen the viability of small- and moderate-sized farms in the UK? There is concern among operators of some small farms in the UK that current agri-environmental programs help large farms more than small farms. They argue that operators of large units can afford to farm at least some of their land less intensively, in return for stewardship payments, whereas for many operators of small units, the payments are not generous enough for them to be able to forego intensive production techniques (FFA, 2000, p. 3).

One approach that could help tie together social and stewardship objectives in the UK would be to make a greater reduction in the CAP support payments of large farmers than in the payments of small farmers, as funds are shifted from production supports to rural development and agri-environmental

programs under the Rural Development Regulation of Agenda 2000 CAP reforms. The UK government has decided, at least for now, to implement `modulation' (the shifting of funds from production support to rural development and agri-environmental programs) by making flat rate (equal percentage) cuts across the board, rather than placing steeper rates of reduction on those receiving larger support payments or establishing ceilings on production support payments (FFA, 2000, pp. 2-3; MAFF, 2000, p. 208). Some would feel that this is a missed opportunity to make a shift toward smaller farms in the balance of overall government support in agriculture. However, the record of accomplishment from the US experience over the years in `targeting' support to `family' farms is not very good. There always seem to be ways to get around payment ceilings, by various kinds of business reorganizations and redefinitions of ownership. Part of the explanation for the dismal US record, however, may rest on a lack of collective and political will to design and enforce really meaningful payment restrictions—and to recognize that closing loopholes is, necessarily, an on-going process.

Another approach would be to provide higher rates of payment for small farmers under agri-environmental schemes or to limit the total stewardship payments any one farm or farmer could receive. However, policy makers face the same kind of farm organization and definition problems that they would need to contend with in limiting CAP production support payments. Ownership and tenancy relationships are extremely complex in the UK (Vaze, 1998), as they are in the US, making it very difficult to establish operational criteria. Moreover, there seems to be more feeling in the UK than in the US that 'large' farms are better able than 'small' farms to carry out sound stewardship practices. According to that view, public policies should not discourage large farms from taking full advantage of available agri-environmental schemes.

Whether agri-environmental schemes are designed to favor small farmers or merely not to discriminate against them, it is important that rules of participation not be so complex that only the large farmers can afford the necessary management time and consulting assistance to determine whether and how to become engaged. Also, a large portion of the planning and technical assistance associated with participation in agri-environmental schemes should be covered by stewardship payments, at least for the smaller farms.

There are programs outside what is normally thought of as agri-environmental policy which can directly support both social and stewardship activities. Programs to support farmers' markets constitute a good example (Table 1). Small farmers normally are the most active participants in such markets, and many of those farmers use organic or low-chemical input production methods. Also, more government supported research and development focused on `appropriate-size' technology could be of great benefit for operators of small- and moderate-sized farms who are attempting to employ integrated or organic

farming systems. Smaller-scale, affordable machinery for these diversified farming systems is a particular need.

One of the most effective ways to simultaneously support stewardship objectives and social objectives related to small farms and rural employment is through the kinds of non-farm activities listed in the last column of Table 1. Physical, human, and social capital all are critically necessary for small farms and related service, marketing, and processing businesses to operate profitably in rural areas. Economically healthy farm and non-farm businesses provide the population, income, and tax bases that are so important for the sustainability of rural communities. Many farm families would prefer to make their living completely from the land. When that is not possible, however, the presence of viable off-farm jobs can enable one member of a family to contribute financially by working off the farm and another member to farm a small holding in an economically viable and ecologically sustainable manner.

Compatibility of World Trade Organization Rules with Stewardship Schemes

As governments shift more of their agricultural support to agri-environmental schemes, increasingly complicated issues of compatibility with World Trade Organization (WTO) rules are emerging. The Uruguay Round 'Agreement on Agricultural Trade" set out a series of decoupled payments that are considered compatible with WTO rules. This zone of compatibility is the so-called 'Green Box'. Among the payments that fall in the Green Box are ones for environmental programs (Swinbank, 2000, p. 16).

However, it is not entirely clear just which policies the WTO will consider to be in the Green Box as Europe advances new policies under the 'multifunctionality' banner. Figure 1 seeks to bring clarity to this issue. An agri-environmental policy that is fully 'decoupled' from production support would be one that is in the lower right-hand corner. Such a policy would advance society's environmental goals—say, by producing positive externalities or reducing negative externalities—without also increasing production. Stewardship payment schemes that provide incentives to restore hedgerows and increase field margins are good examples.

Some other agri-environmental policies are likely to be more controversial with respect to Green Box classification. There is considerable concern in Europe that the movement toward free trade and farmers having to depend on world market prices could "*lead to marginalization of agriculture and rural areas, resulting in land abandonment*" (Latacz-Lohmann, 2000, pp. 3-4). The European idea of 'managed countryside' is one in which, over some range, the joint production of food and environmental goods is complementary, rather than competitive. If agricultural support falls too low, it may no longer be economically viable for farms in some areas to produce either conventional agricultural commodities

or the kinds of landscape and habitats European societies have come to value (Latacz-Lohmann, 2000, pp. 3-4; Swinbank, 2000, p. 16). In such a situation, does an agri-environmental scheme designed to maintain multifunctional agriculture—in the Cotswold region of Western England, for example—fall inside or outside the WTO's Green Box? A number of agri-environmental schemes in Europe may be like this—toward the stewardship support corner of Figure 1, but part way up the continuum running to the production support corner.

Latacz-Lohmann (2000, pp. 9-14) has listed a number of suggestions for determining which kinds of agri-environmental policies legitimately belong in the Green Box. In essence, these suggestions call for policies that focus primarily on stewardship support while limiting, to the extent possible, `trade-distorting' commodity production and price effects. Payments should be coupled to stewardship and decoupled from production, even though, in practice, stewardship payments will sometimes cause production to be higher than it would be otherwise. Some middle-ground interpretations, recognizing and accepting this inherent joint production, will be necessary on the part of the WTO. This world body is an institution created by governments, and as such, it must respond to values that are strongly felt in the societies those governments represent. The WTO will lose credibility if it does not respond to some of the social values that fall outside narrow interpretations of the market and comparative advantage (Swinbank, 2000).

Capitalization of Scheme Benefits into Land Values

A long-standing issue in both the UK and the US is how to design programs that support farmers' income without causing land values to increase because of the `capitalization' effect (Dobbs, 1993, pp. 6-7; RASE, 2000, p. 32). A farmer's wealth is increased if he/she already owns land when a support scheme is created or support payments are increased. In addition, access to farming by potential new entrants to agriculture is hindered by the higher purchase or rental costs of land. More importantly, the capitalized values of these income support streams serve as a major political barrier to change. Reductions in supports or outright elimination of the programs would cause land values to decrease, thereby eroding the wealth (and planned retirement) base of those who own farmland. In part to cushion and make politically acceptable that type of impact, the 1996 US Federal Agricultural Improvement and Reform (FAIR) Act's elimination of crop deficiency payments was accompanied by a government commitment to very generous `production flexibility contract payments' for a seven-year period.

There will be strong political pressures to `hold harmless' both individual farms and farming regions as UK CAP funds are shifted from production support to stewardship support. To some extent, it may be possible to do this in the case of farming regions. Environmental issues most relevant to each

region could be identified and, at least for a number of years, roughly the same amount of money that had gone for production support could be redirected to stewardship support in each respective region. This would be more difficult to accomplish on a farm-by-farm basis, however. To count as environmental expenditures for `Green Box' purposes, funds must be used to address specific environmental or ecological concerns. It is unlikely that very many farms would qualify for nearly the same amount of CAP funds, based on environmental criteria, that they had qualified for under commodity support rules. Some would qualify for substantially less, and some might qualify for much more.

It may be possible, however, explicitly to link some of the funds shifted away from production support to individual farms by using the broader rubric of `rural development'. Indeed, the Agenda 2000 Reforms allow member states to shift CAP funds to rural development and agri-environmental programs. Rural development could include both on- and off-farm activities. On-farm activities could include various kinds of attempts to economically diversify. A liberal interpretation of the Agenda 2000 Rural Development Regulation might allow funding to be earmarked for social support (Figure 1) of individual farms or farmers, to provide temporary cushion for the decrease in production support and to help enable diversification or preparation for off-farm employment. That kind of social support should be time-limited, as the US FAIR Act production flexibility contract payments were *intended* to be.

Assuming funds intended for social support are time-limited, would that also be the case for agri-environmental funds? If agri-environmental funds are not limited to a particular period of time, do they also simply become another form of entitlement, and thereby also become capitalized into land values in the same way that have production supports? If stewardship payments are based on opportunity costs—i.e., the profits foregone by farming in an ecologically beneficial manner, rather than in the `conventional' way—there may not be any `extra' profits to become capitalized into land values. When a farmer fails to renew an agri-environmental agreement (or is not offered renewal), he or she stops receiving payments. If payments were just covering the opportunity costs associated with participation in the agri-environmental scheme, net returns to the farm would be unchanged when participation ceases, and land values would be expected to remain unchanged.

Successful agri-environmental schemes often will have created or enhanced natural capital, which may produce on-going streams of both public and private (farmer) benefits. Improved soil structure and organic matter content that reduce erosion, for example, can improve crop yields (a private benefit to the farmer), as well as decrease offsite negative externalities and increase positive externalities through carbon sequestration (both public benefits). How to assure continuation of the public stream of benefits is the `end of contract problem' (Whitby, 2000, pp.325-329). To the extent this natural capital continues to enhance farm profitability after the end of the agri-environmental contract, we would expect that profit

stream to be capitalized into land values. But, the fact that the farmer has a private stake in protecting the natural capital which has been created means that the public stream of benefits may also continue without the need for on-going stewardship payments.

Of course, not all agri-environmental schemes operate in this way. Some schemes may create natural capital that produces only or primarily public benefits. Improved bird habitat sometimes fits this description. Then, the public policy issue of how best to protect that natural capital arises. Renewed or new contracts providing additional stewardship payments imply that farmers should continue to be compensated for any on-going private opportunity costs associated with protecting that capital. Regulations that place limitations on farming practices, to protect that capital, imply that the initial contract payments are sufficient compensation and the public does not expect to `pay twice'.

Realistically, most voluntary agri-environmental schemes will need to do more than simply offset farmers' opportunity costs if they are to be successful in attracting widespread participation. Stewardship payments generally will need to either increase profits or reduce risks some, or both. The important thing is for government bodies not to imply that these stewardship payments are open-ended. The goal should be for farmers to eventually *take ownership* of the environmentally-friendly farming systems being promoted. It may, indeed, be the case that some practices which provide public benefits are so costly to farmers that they will always need to be compensated. Even there, however, the payments generally should not come to be viewed as entitlements. If farmers only are *assured* of payments for the length of each contract, there is less likelihood of *expected* income streams beyond the contract periods being capitalized into land values.

How to Gain from Bottom-up Planning and Subsidiarity

To what extent should agri-environmental agreements with farmers reflect detailed *top-down* guidelines as compared to farm-specific plans developed in a more *bottom-up* fashion? Top-down guidelines might reflect budget priorities of the EU, the UK government, or governing bodies and agencies whose mandates specifically cover England, Scotland, Wales, or Northern Ireland. It would be unrealistic to expect money for agri-environmental schemes from any of these 'higher' levels of government to come without conditions attached. In fact, without some top-down guidelines and related expectations of accountability, taxpayers are unlikely to provide sustained political support for the schemes.

However, guidelines from the top that are excessively detailed and rigid will not be efficient in providing the environmental goods society desires. Regional differences among ecosystems and rural economies necessitate some flexibility in developing specific goals and means of meeting those goals.

This implies the need for regional and local bottom-up input in the planning and implementation process.

We can carry this argument for flexibility all the way to the individual farm level. Since individual farms within any local area differ in soils, topography, distance to groundwater, access to transportation, and other characteristics, the most cost-effective way to achieve societal stewardship expectations will vary from farm to farm. However, agri-environmental agreements tailored to each farm can be expensive to develop.

'Transactions costs' are key in thinking about the best mix of top-down guidelines and bottom-up processes for agri-environmental schemes. These include the public and private costs associated with (a) gathering and providing information needed by both the implementing agencies and farmers, (b) negotiating agreements, and (c) ensuring compliance. The orthodox view is that bottom-up approaches which allow greater site-specificity in schemes will be more costly because of high transactions costs. Standardized contracts based heavily on top-down guidelines or menus are assumed to have lower negotiating costs. However, they may provide fewer environmental benefits, or require higher stewardship payments to provide equivalent benefits, because farm heterogeneity is neglected (Falconer and Saunders, 2000, p. 4). Therefore, it is the total costs—not just transaction costs—in comparison to environmental benefits that must be considered in thinking about the appropriate mix of top-down and bottom-up processes for agri-environmental schemes.

Falconer and Saunders (2000) have suggested that the most cost-effective approach is one which is both targeted to specific kinds of environmental improvements and focused on contracts which are tailored to each farm. They compared transactions and compensation (stewardship payment) costs of two different approaches that have been used in the north of England. The Sites of Special Scientific Interest (SSSI) scheme, based on individually tailored and negotiated farm contracts, was compared to the Wildlife Enhancement Scheme (WES), which uses standardized (menu-driven) contracts. Transactions costs examined by Falconer and Saunders included both negotiation and on-going management costs. WES agreements were found to have lower negotiating costs than SSSI agreements, but the on-going agreement maintenance (management) costs for WES agreements were higher. When all costs were considered, WES agreements were not the cheapest.

Falconer and Saunders raise related concerns about approaches that utilize fixed menus of standard payments. Such approaches can be inflexible in terms of possible prescriptions that can qualify for stewardship payments. There may be questions of fairness, if the menus and related prescribed payment rates do not adequately account for differences among farming systems. Moreover, *"it is difficult to attract intensive farmers into a scheme with sufficiently attractive payments while not over-paying less-intensive participants"* (Falconer and Saunders, 2000, p. 13).

The Norfolk Area Land Management Initiative (NALMI), in England, is one promising approach for including bottom-up processes that recognize both regional and individual farm differences. Stewardship funds will come from higher-level government programs, such as the Countryside Stewardship Scheme (CSS), but there is a strong element of 'subsidiarity'—in that responsibility for identifying local priorities and individual farm plans has been devolved to the local level. How NALMI and the Countryside Agency's other Land Management Initiatives in England perform, in practice, over the next several years could have critical bearing on the direction to be taken by expanded agri-environmental schemes.

Also worth noting in the EU are France's new Contrats Territoriales d'Exploitation (land management agreements, or CTEs). Implementation of Agenda 2000's Rural Development Regulation in France will focus heavily on these CTEs. There is a single national plan for implementation, but a very devolved pattern of application. The intention is to create action plans to achieve sustainable management and development based on strong notions of 'place'. Devolution allows plans to vary according to the resources and needs of 26 different regions and more than 100 Départements (counties) in France. Farmers can enter into CTEs, each of which will last for five years. Each farmer's CTE will contain two elements: (a) a plan to develop the farm in a way that will directly benefit the farm business; and (b) a plan that addresses the farm's role in helping to meet collective environmental and economic needs of the area. Each county will have a committee to establish the range of measures that will be offered to farmers in CTEs. Committees will be comprised of farmers and representatives of local government bodies, environmental groups, and consumer groups (Dwyer, 1999; Dwyer, 2000). The French approach could provide valuable lessons for bottom-up agri-environment planning and implementation.

In attempts to achieve the most cost-effective mix of top-down and bottom-up elements for agri-environment schemes, two additional considerations are important. One is that truly lasting change is more likely to be achieved through a bottom-up approach, in which farmers and other local people develop and 'take ownership' of the detailed strategies, than it is through a top-down approach that is perceived as heavy-handed. The second, however, is that an approach dominated by bottom-up elements must not simply become a covert way to sanction stewardship payments for 'business as usual' farming.

Stewardship Payments for Farmers Already Practicing Good Stewardship?

One final issue to be noted here is that of how *additionality* is to be interpreted. A provision of the Uruguay Round Agreement on Agriculture limits agri-environmental payments to the extra costs of complying with government programs (Latacz-Lohmann, 2000, p. 11). The UK Treasury also is insisting on additionality. Except in the Environmentally Sensitive Areas, simply maintaining habitat is not

considered sufficient to qualify for agri-environmental payments. There must be additional public benefits over and above what is already provided by the farmer without payment. This results in contradictions: farmers who had previously removed hedgerows could be paid to restore them, but those who had maintained hedgerows at their own expense would not qualify for payments (RASE, 2000, p. 34). Similar contradictions have long plagued conservation policy in the US.

This issue must be addressed head-on if agri-environmental policy is increasingly to take center stage. In the interests of fairness and consistency, it is clear to us that all farmers must be equally eligible for payments for providing particular environmental services, whether or not they were already providing the services without compensation. This is not to say that every environmental service or externality-avoidance merits compensation. It is simply to say that if one farmer is eligible for compensation to begin providing a service, every other farmer (in like areas and circumstances) who is already providing the service must also be eligible. 'Additionality' needs to be interpreted with respect to *normal* farming practices, not with respect to particular farms. For example, if our recommendation to create a fund to pay farmers for legume-based crop rotations in arable areas is adopted, all farmers in designated areas should be eligible for payments, including those who already were using qualifying rotations. If this common sense position is incompatible with additionality interpretations of the WTO or other governing bodies, then those interpretations need to be rethought and changed.

Our position does not make life easy for policy makers and agri-environmental agencies, however. First, of course, are the budgetary implications. Making everyone eligible would be expected to add to the expense of providing a particular set of public environmental services. However, in the long run, government costs might not be greater, because farmers would come to see that 'bad environmental behavior' is not rewarded—or, conversely, 'good environmental behavior' is not penalized.

Second, establishing what is *normal* and what are *like circumstances* is not easy, in practice. Normal rotations for one set of farms in a local area, for example, may be different from what is normal for other farms in the same vicinity because of subtle differences in circumstances. Those circumstances include soils, slopes of terrain, and drainage, to name a few. There are substantial administrative costs in taking all of these circumstances into account to establish and implement agri-environmental program eligibility criteria. Using eligibility criteria derived from comparisons of what is 'additional' relative to 'normal farming practices' is doable, but not without some difficulty.

Conclusions

> *"Given the long the long history of antagonism over agricultural policy between the European Union (and its predecessors) and the United States, it might be considered foolhardy to suggest that there is any possibility of achieving a*

> *transatlantic understanding in this area. From the western reaches, agricultural policy in Europe is typically characterized as inward looking, designed to protect conservative and inefficient farmers from competition. The United States is portrayed as the champion of free trade. Its vision is a world in which a progressive modern agricultural sector provides consumers with wholesome food at bargain basement prices; managing to make a healthy profit in the process. From the eastern shores, European agricultural policy is portrayed as the guardian of the environment and rural areas, and the protector of human health. The image is one in which agriculture produces a wide range of desirable outputs of which food is just one; in the process safeguarding all that is valued by the European public at large.*
>
> *Neither of these two cartoon characterizations comes close to reality. Europe and the United States are both grappling with finding a way forward on agricultural policy that will permit their agricultural sectors to prosper economically, yet at the same time address critical environmental and social concerns.*" (Blandford, 2000, p. 1)

The next steps forward on both sides of the Atlantic will need to be rooted in a deeper understanding of shared goals and problems as we begin the 21st century. Further, substantial policy reforms are required on both sides of the Atlantic if shared goals are to be accomplished. This means that European and North America policy makers must be willing to learn from the past and from each other as they craft new directions in agri-environmental policy. If the EU and the US were able to develop a rough consensus on a mutually-shared direction for policy reform—one in which farmers on both sides of the Atlantic perceive the playing field to be more or less level—then the political feasibility of enacting needed reforms would be greatly enhanced.

The US could take a cue from the 'modulation' that has begun in EU member states, by which significant portions of funds formerly earmarked for production-related supports are being shifted to rural development and agri-environmental schemes. Planned shifts are thus far much more modest in the UK than in France, but the important point is that the process has been set in motion. Farmers are less resistant to decoupling if there is some assurance that a major portion of the funds will at least remain earmarked for agricultural and other rural supports of some kind. Some research on implications of shifting funds to stewardship payment programs was carried out during debates leading up to the 1996 Farm Bill in the US (e.g., Lynch, ed., 1994; Lynch and Smith, 1994). It is time now to re-examine the possibilities for major shifts of funds from traditional production-related supports to rural development and environmental stewardship schemes on the US side of the Atlantic.[4] A major agri-environmental scheme or scheme component for legume-based rotations should be seriously considered.

[4]Claassen, et al. (2001) have recently provided an excellent discussion and analysis of agri-environmental payment program design options.

Whole-farm planning and agri-environmental planning at regional levels would need to come to the forefront if legume-based rotations were to be the core feature of agri-environmental schemes in major grain-crop areas. Various whole-farm approaches are being used to promote integrated farming in the UK; the Norfolk Area Land Management Initiative (NALMI) combines regional and whole-farm planning in an area of eastern England. Ervin and Smith (1996) and Higgins (1998) have described and analyzed alternative whole-farm planning approaches in North America. While some experimentation with alternative approaches will continue to be warranted, there is enough experience and knowledge now available to move ahead with major agri-environmental schemes featuring whole-farm planning in the context of regional agri-environmental goals and strategies.

Whatever the exact forms 'stewardship payment' programs take, it is clear that the conceptual basis must be multifunctionality. The idea that agriculture provides a number of 'public goods' and 'positive externalities', in addition to food and fiber, for which farmers might appropriately be compensated has taken root in European policy circles. Although the multifunctionality concept was at first derided in the US as a new European 'protectionist' ploy, it is now starting to receive serious consideration as a possible basis for new US agri-environmental policy in 2002. Multifunctionality certainly embodies complications for WTO negotiations and interpretations. These are complications that can and must be addressed, however, if environmental stewardship in its broadest sense is to take on greater importance on both sides of the Atlantic.

Organic agriculture vividly illustrates both the opportunities for and the complexities of developing sensible agri-environmental policy on the basis of multi-functionality (Dobbs and Pretty, 2000). The appropriateness of government payments to assist farmers making the transition to organic production is widely accepted within the EU, based on the multiple benefits organic agriculture is believed to offer. Most European countries also provide on-going support beyond the transition period. US policy toward organic agriculture has been largely passive, however. Little has been done at the national level to actively encourage organic agriculture. A logical companion to our proposed stewardship scheme for legume-based rotations would be a program in the US, like those in Europe, to assist both the transition to and the on-going economic viability of organic farming. Schemes to promote legume-based rotations and organic agriculture would need to be closely coordinated.

We must underscore the importance of strong government support on both sides of the Atlantic for social and human capital, which are so critical to the transformation to more sustainable agricultural systems. Successful stewardship schemes do not just move farmers from one static point to a new static point. Rather, they engender a dynamic process that eventually moves farmers into an active, redesign,

interdependent stage in the accumulation of renewable assets.[5]

Accounting for this dynamic element requires a transformation in policy thinking—away from an overly simplistic, relatively static comparative advantage perspective. The new policy perspective explicitly acknowledges multiple objectives for agriculture and the necessity for continuous learning about what is really 'sustainable'. It also recognizes the need to constantly seek an appropriate balance between flexibility and adaptation to markets, on the one hand, and the needs of farmers and others in rural areas for some degree of stability, on the other hand. This broader perspective adds complexity to trans-Atlantic dialogue, but it also adds realism and thereby provides a stronger basis for consensus about future directions in agri-environmental policy.

[5] See conceptual framework in forthcoming report by Dobbs and Pretty, described in Footnote 2.

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