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European agri-environmental policy for the 21st century

Uwe Latacz-Lohmann and Ian Hodge*

The present paper reviews the development of agri-environmental policy in Europe and assesses its prospects. While it does so from a predominantly UK perspective, there are many common features of the experience and policy choices across the majority of Member States. The first generation of agri-environmental measures applied command-and-control regulation for the prevention of pollution. Second-generation measures pay farmers for providing environmental public goods. The emphasis on 'amenity' derived from the maintenance of agricultural production systems contrasts with policy approaches in Australia and the USA. Well-designed incentive schemes constitute 'quasi-markets' for public goods, correcting for a pre-existing market failure. Problems in the delivery of policy include poor spatial targeting and a lack of clarity between environmental and income support objectives. Various changes will be required in order to increase the environmental effectiveness and efficiency of agri-environmental mechanisms.

1. Introduction

The past two decades have seen a shift in the pattern of demand for goods produced by European agriculture. Increasing wealth, mobility and leisure time, plus the relocation of population towards rural areas have all acted to increase the marginal value of environmental and amenity goods relative to the marginal value of food and fibre. During the same period, the supply of such goods as scenic landscapes, wildlife and biodiversity has been seen to be in decline. The Common Agricultural Policy (CAP), which has emphasised the production of food and fibre at the expense of the quality of rural environments, has been seen, at least in part, as a cause of this environmental quality decline. These developments have given rise to a rural environmental movement and the development of an agri-environmental policy.

* Latacz-Lohmann and Hodge are with the Department of Land Economy, University of Cambridge, UK. Uwe Latacz-Lohmann is also Adjunct Lecturer in the School of Agricultural and Resource Economics, University of Western Australia. An earlier version of this paper was presented at the January 2000 AARES conference in Sydney supported by a grant from the Australian Agricultural and Resource Economics Society. Thanks to Peter Thomas, Mike Young and the editors for incisive comments and suggestions on an earlier draft. Responsibility for the final content, however, rests strictly with the authors.

In the present paper we review the development of the agri-environmental policy and its main instruments in Europe. We then consider the prospects and requirements for the future development of the EU agri-environmental policy. We do this from a predominantly UK perspective, although features of other members states' experience are also noted. The position of the UK is rather different, perhaps particularly in two ways. The average size of agricultural holding in the UK is greater than that in other European countries, resulting from a variety of factors, such as enclosures, early industrialisation, and the absence of protection in the 19th century. Public preferences for rural areas tend to emphasise the issues of landscape and wildlife conservation over issues of pollution and the maintenance of local cultures. However, there are many features common to EU Member States. We here make a more general distinction between 'Old World' countries where the valued qualities of the rural environment are associated with the maintenance of certain types of agricultural systems. This stands in contrast with the position in 'New World' agricultural exporting countries, especially Australia, where environmental values are often associated with the equity to future generations of depleting stocks of natural resources such as soil fertility, native vegetation and biodiversity.

2. Origins of agri-environmental policy in Europe

Modern agricultural policy has its origins in the drive to increase production during the Second World War and the policy frameworks introduced subsequently to maintain this momentum, such as the Treaty of Rome and the 1947 Agriculture Act in the UK. Prior to the War, substantial areas of land suffered from neglect and abandonment associated with low returns to agriculture and poor planning. The intensification and modernisation of agriculture was seen at the time as serving a number of objectives simultaneously: enhancing food security, increasing rural employment and protecting amenity through the maintenance of a 'well tended' countryside, in contrast to the pre-war agricultural dereliction.

However, the 1970s saw a breakdown in the consensus over the role of agriculture in the countryside. The destructive impact of agricultural expansion became increasingly evident. Driven by the advances in technology and high prices supported through the CAP, farms had lost many of their natural features in order to accommodate more land under tillage, supported in turn by increased use of fertiliser and pesticides. Land consolidation programs had resulted in removal of hedgerows and other landscape features, the erosion of semi-natural habitats, and homogenisation of landscapes. In addition, pollution from intensive agriculture had become of increasing concern, particularly in Denmark, Germany and The Netherlands.

There has also been a rising concern for food quality and growing criticism of the cost and apparent inefficiency of public expenditure on agriculture. The crisis facing the CAP, first acknowledged by the community in the mid-1980s, was seen to arise from an expansion of agricultural output at a rate that had outstripped the capacity of community markets, the community's agricultural budget and, indeed, the capacity of the natural environment (Bowers and Cheshire 1983). As a result, since the mid-1980s both national governments and the community began to embark upon the implementation of an agri-environmental policy.

3. Regulation of agricultural pollution

The first generation of agri-environmental measures, dating from the 1980s, tended to focus on pollution prevention by means of command-and-control. Statutory regulation was introduced to control nitrate pollution, pesticides, intensive animal husbandry and silage production, and the application of animal waste to land. Many regulations were pioneered by individual Member States with little coordination of standards across the community.

While pollution prevention has been the major concern in most of the community's northern countries, Britain and the southern countries have had somewhat different priorities. Britain's policy for the rural environment has retained a distinctive approach, emphasising countryside and nature conservation reflecting different cultural views of rural areas and different environmental conditions. Pollution issues have never been of primary importance. States in southern Europe were only beginning to embark on an output-expanding path at the time when northern states introduced their first pollution prevention measures and had shown little interest or initiative in developing their own regulations. However, the community has subsequently imposed the regulatory approach in all Member States. This is done through two approaches: Regulations which are directly applicable within Member States, and Directives which specify the required outcome but where the legislative means are left at the discretion of the Member States. Even so, in practice the transposition of EU law into national legislation has not always been perfect.

3.1 Nitrate pollution

The EC Drinking Water Directive of 1980 (ECC 80/778) was the first piece of community environmental law with potential repercussions for agriculture. The Directive introduced upper limits, inter alia, on the

concentrations of nitrate and pesticides in drinking water.[1] Member States responded with a variety of measures, ranging from closure of heavily affected bore holes, to treatment of extracted water using blending and ion exchange, to the delimitation of water protection zones in which farmers would face mandatory constraints on the use of fertilisers and pesticides. In 1991, this was supplemented by the Nitrate Directive (EEC/91/676) which is concerned particularly with the protection of water (not only drinking water) against nitrate pollution from agricultural sources. It requires Member States to take protective action where groundwater or eutrophic freshwater bodies are predicted to contain nitrates above the 50mg/L threshold. Water pollution controls are currently being incorporated into the EU Water Framework Directive (adopted in 2000) which will establish a number of water quality standards and introduce measures based on a river basin approach.

The UK response to these standards was initially to introduce controls through voluntary contracts relating to the application of nitrogen in designated Nitrate Sensitive Areas (NSA). But the emphasis has now shifted to 68 Nitrate Vulnerable Zones (NVZ) where individual farmers face mandatory controls on the type, quantity and timing of applications of inorganic fertiliser and organic manure. In contrast to the NSA Scheme, farmers in NVZ are not entitled to compensation as the rules are assumed to represent 'good agricultural practice'. This change represents a clear shift in the reference level of environmental quality regarded as a duty on landowners. There is current consultation underway as to whether to declare the whole of England an NVZ.

3.2 Pesticides

Compared to the measures to prevent nitrate pollution, community law on pesticides is much more piecemeal in that the legislative measures are often part of other pollution control regimes. In the UK, EU law has been implemented through a combination of measures including the Pesticides Regulations of 1994, setting maximum pesticide residue levels in foodstuffs; the Food and Environment Protection Act of 1985, imposing criminal sanctions in respect of contaminated food and The Control of Pesticides Regulations of 1986, steadily increasing the level of mandatory regulation. The last of these sets out detailed rules governing proper use and storage of pesticides and other plant protection products and requires users to receive

[1] The maximum allowable concentrations are 0.1 microgram per litre of any individual pesticide (irrespective of its toxicity) and 50 milligrams of nitrate per litre. These are blanket standards which have to be achieved throughout the EU.

adequate instruction and training (Hawke and Kovaleva, 1998; Nix *et al.* 1999). Some Member States impose specific constraints on the use of pesticides in water protection zones. Across the EU, pesticide products must be individually approved and registered prior to their sale.

3.3 Intensive livestock holdings and animal waste

The control of farm wastes, in particular animal manure, is another area which has been addressed mainly by command-and-control measures. Germany, Denmark and The Netherlands have long-established regulations governing the rates and timing of manure spreading over agricultural land. Manure regulations usually contain stocking rate limitations which effectively link all forms of livestock production, including poultry and pigs, to the land. More recently, a market approach has been adopted in the Netherlands – through levies on nutrient surpluses and opportunities for manure trading among farmers. In addition to national legislation, the European Union has included large intensive livestock units within the 1996 Integrated Pollution Prevention Directive (EC 96/61).[2] Units falling within the Directive must be authorised by the relevant regulatory authority, which may impose conditions not only on the establishment and running of a unit but also on its eventual decommissioning (Nix *et al.* 1999).

4. Development of agri-environmental contracting

While regulatory measures have been relatively well accepted in controlling agricultural pollution, efforts in the 1980s to extend these measures to the emerging problems of landscape change, wildlife loss and habitat destruction have largely failed. Attempts by the German government in the early 1980s to impose mandatory controls on farming activities in nature conservation areas met stiff opposition from the farming community and triggered a long-lasting political battle over property rights in land and nature (Mährlein 1990; Meinhardt 1991). Farmers regarded the statutory controls as an undue interference with their property rights and successfully argued for compensation on the basis of profits forgone. This effectively meant a reallocation of property rights in favour of the farming community and paved the way for voluntary, incentive-based policies which would eventually become the dominant instrument of agri-environmental policy across Europe.

[2] 'Large' units are defined as having more than 40 000 places for poultry, 2000 places for pig fattening, or 750 places for sows.

4.1 Compensation approach

A semi-voluntary approach to nature and landscape conservation based on compensatory payments had, by the mid-1980s, already been pioneered in Britain and in The Netherlands (Potter 1998; Slangen 1992). The British Wildlife and Countryside Act of 1981 required advanced notification from farmers intending to carry out potentially damaging operations (PDO) on protected land, so called Sites of Special Scientific Interest (SSSI).[3] Farmers with land in SSSI were required to notify the authorities of an intention, for example, to drain a piece of wetland, to convert heather moorland to pasture, or to plough up species-rich meadowland. The 1981 Act introduced a requirement for nature conservation authorities to compensate farmers on the basis of profits forgone where applications to carry out PDO were refused. Management prescriptions and compensation payments are laid down in a contract, a so-called management agreement, between the farmer and the nature conservation authority.

The system underlying SSSI quickly came under criticism because it required conservation agencies to expend large shares of their budgets on compensating farmers who were threatening environmental damage. More importantly, nature conservation agencies were seen to be taking over some of the burden of agricultural support through the replacement of forgone agricultural subsidies. But this, in fact, provided the impetus and considerable ammunition for powerful lobbying for agricultural policy reform from conservation groups. A strong argument was made for redirecting money from production grants into conservation schemes (Potter 1998).

4.2 From compensation to incentive payments

The criticism of the SSSI approach led to the then novel idea of offering a flat-rate payment to all farmers within ring-fenced, environmentally sensitive areas, regardless of their intention to undertake an environmentally damaging operation. The underlying idea that farmers would be paid for the provision of environmental goods and service (rather than being compensated for not

[3] SSSI are areas of land or water containing plants, animals, geological features or landforms which are considered to be of special interest from the point of view of nature conservation. SSSI are designated by English Nature, the government's nature conservation agency. Presently there are just over 2 million hectares of British land in SSSI. Authorised by the 1949 *National Parks and Access to the Countryside Act*, SSSI are a relatively old and well-established mechanism for site protection. The focus on *site* protection reflects the prevailing view, until the 1970s, that the *wider* countryside is safe in the hand of farmers and thus does not require specific protection.

undertaking an environmentally damaging operation) played well with both environmentalists and the farm lobby.

In 1984 the idea was put to the test. The Halvergate Marshes, part of the Norfolk Broads in East England, were threatened by drainage and subsequent ploughing-up. The Broads Grazing Marshes Scheme was hurriedly introduced by the Countryside Commission, initially funded by the Treasury. This offered all farmers on the marsh a flat-rate annual payment in return for an agreement to continue farming at a low intensity. The scheme would prove to be a milestone in European agri-environmental policy in many respects. First, it marked a shift away from the negative, reactive, compensatory approach, towards a more pro-active, forward-looking, incentive-based policy. Second, the model adopted by the Broads Grazing Marshes Scheme would become the general model for all subsequent agri-environmental management agreements. Third, the scheme marked the beginning of a reorientation to the concept of environmental custodianship or, at least, the recognition of the wider role of agriculture in the countryside – that conservation was produced jointly with agricultural outputs.

4.3 Institutionalisation of environmental contracting across Europe

The concept of 'paid stewardship' was first given prominence in community law with regulation ECC 797/85 of 1985, permitting Member States to provide funding from their own resources for agri-environmental incentive schemes in environmentally sensitive areas, such areas being prescribed by Member States.

The 1985 regulation marked the beginning of positive, incentive-based agri-environmental policy in the northern states of the community. The British government launched the Environmentally Sensitive Areas (ESA) Scheme in 1986. Environmentally sensitive areas are geographically delimited areas of particularly high landscape, wildlife or historic value threatened by changes in farming practices. Farmers in these areas are offered a flat-rate payment for adopting or maintaining farming practices of benefit to the environment. The ESA Scheme was the first agri-environmental program to be administered by an agriculture department rather than an environment department. Ten years after the initial designation of six ESA in 1986, 15 000 farmers across the UK had signed ESA management agreements covering an area of 1.3 million hectares and involving payments of approximately £50 million in 1997–1998 (Nix *et al.* 1999).

The German government had taken a slightly different approach by offering, inter alia, a countrywide (rather than geographically targeted) extensification program. The program offered payments for reductions in the use of pesticides and fertilisers or, alternatively, for conversion to

organic agriculture. It had the dual objective of encouraging environmentally friendly farming practices and achieving a 20 per cent reduction of agricultural commodity output. Britain followed the German model for schemes outside designated areas with the launch of the Countryside Stewardship Scheme in 1991. The scheme aims at re-creating and restoring farmland habitats and was offered countrywide, although priority was given to certain landscape and habitat types.

By the late 1980s, most northern states of the community had in place a number of agri-environmental incentive programs. However, southern Member States, still fully committed to a productivist CAP and the further development of their agricultural industries, had largely ignored regulation 797/85 and the opportunity it offered for introducing rural environmental programs.

Two years after the launch of the 1985 regulation, it was agreed that, up to a certain ceiling, agri-environmental payments may be eligible for a 25 per cent reimbursement from the guidance section of the European Agricultural Guidance and Guarantee Fund (EAGGF). This development must be seen in the context of the mounting pressure on the CAP's budget, caused through overproduction. It marked the initial acceptance that supporting environmentally friendly farming practices might also help to curb surplus production (Baldock and Lowe 1996).

4.4 Agri-environmental regulation

The 1992 Agri-environmental regulation (ECC 2078/92), introduced as part of the accompanying measures of the 1992 MacSharry Reforms, resulted in several more rural environmental incentive schemes being put in place. This regulation differs in crucial respects from earlier measures (Baldock and Lowe 1996).

First, the regulation made it a mandatory requirement for all Member States to implement an agri-environmental program, aiming to prevent a repetition of experience with regulation 797/85, which was largely ignored by Member States in the south. Second, the new regulation contained a wider range of measures intended to address the environmental concerns of all Member States and to avoid what came to be seen as a northern bias in the acceptability of earlier measures. Third, the regulation provided for co-financing of agri-environmental schemes from the guarantee section of the EAGGF, thus setting the agri-environmental measures on an equal footing with the CAP's commodity programs. Finally, the new regulation allowed for all agricultural land to be included in agri-environmental programs rather than, as hitherto, only environmentally sensitive land. In these ways, the Agri-environmental regulation firmly established the principle of 'paid stewardship' across the community.

4.5 Rural development regulation

The most recent innovation has been the introduction of the Rural Development Regulation under the Agenda 2000 reforms in 2000. This further endorses the concept of 'paid stewardship' in establishing the 'second pillar' of the CAP, bringing together policies promoting agricultural diversification, economic development in rural areas and environmental enhancement. While initially something of an empty shell to the extent that there is no new comprehensive rural development policy or any substantial new funding, it does provide a framework for the development of a more coherent approach towards rural as opposed to agricultural policy. The extent to which resources have been directed towards this element of policy varies considerably between Member States. In England and France, use has been made of the provision for 'modulation', to redirect resources from general CAP support to the Rural Development Program.[4] Within the England Rural Development Program, agri-environmental expenditure is planned to increase by 120 per cent between 2000 and 2006. However, other countries have made little use of the provision and even in France the scale of modulation planned has been scaled back, although recent European Commission proposals include compulsory modulation to reach the 20 per cent maximum agreed under Agenda 2000.

4.6 A shifting reference level in property rights

Simultaneously with the institutionalisation of environmental contracting there has been a formalisation of the basis under which payments may be made. For instance, in the UK a series of codes of practice in agriculture have established a benchmark against which payments are defined. Payments are made against the costs of actions going beyond the requirements of the codes of practice. At the same time, in the UK, new legislation has altered the property rights position with regard to SSSI, the context within which the voluntary principle was initially established. The Countryside and Rights of Way Act 2000 ends the principle of payment for opportunities foregone and makes undertaking a potentially damaging operation (now referred to as an Operation Likely to Damage) an offence. Payments will now only be made against the costs of positive actions to improve wildlife values.

[4] 'Modulation' allows Member States to introduce caps on the total amount of commodity support individual farmers can receive. 'Savings' can be redirected to fund schemes under the Rural Development Regulation.

5. Environmental cross compliance

Whether or not Environmental Cross Compliance (ECC) is seen to have been implemented in the EU depends rather on the precise definition adopted. At its most basic, cross compliance refers to the linking of environmental conditions to agricultural support payments (Baldock and Mitchell 1995). Farmers who choose not to comply with a set of pre-determined basic environmental guidelines risk forgoing payments from EU income support schemes. Cross compliance has gained considerable ground in the political debate in Europe since the 1992 Maastricht Treaty of the European Union. Article 130r of the Treaty requires Member States to integrate 'environmental protection requirements ... into the definition and implementation of other community policies'. Cross compliance seems to be doing just that.

Over time, environmental conditions have been introduced which affect the rates of payments made to farmers. For example, headage payments on livestock are determined against the overall stocking density on the holding. Environmental Cross Compliance has been extended under the Agenda 2000 package of reforms agreed in Berlin in March 1999. This makes provision for ECC to be applied to all direct payments deriving from the EAGGF except those payable under the Rural Development Regulation. At present, it looks unlikely that this will be used widely. Germany, for example, insists that its agri-environmental laws and regulations are among the most stringent and comprehensive across the EU. Hence there is no need for cross compliance. There is more enthusiasm for cross compliance in the UK (Weise 1999) but, at the time of writing, no national cross compliance regulation has been drafted.

There are good reasons for questioning the use of ECC in principle. The degree of leverage over the environmental impact depends on the level of the agricultural payment rather than the value of the environmental benefit. The possibility of influence over environmental quality depends on the perpetuation of the agricultural payment. This is an attraction to the agricultural lobby who may thus regard ECC as legitimising the agricultural policy approach. The development of ECC may hinder the search for a more directed and cost-effective approach to agri-environmental policy.

6. European agri-environmental policy: the way ahead

6.1 Pressures on the CAP

The future development of Europe's rural environmental policy must be seen in the context of the wider CAP and its likely trajectory. There are

three sets of forces which are driving the debate on CAP reform. These forces are, first, continued domestic dissatisfaction with the CAP, second, the prospect of further enlargement of the EU and third, the impacts of the move towards more liberalised trade (Buckwell 1997).

Politically, the most important internal opposition to the CAP now comes from environmentalists and consumers who have been lobbying, with growing success, for redirecting money from production grants towards support for alternative production methods which promote environmental conservation, safer and better quality agricultural products, and improved animal welfare. This process may be supported by the European Parliament which is taking a particular interest in health and food safety and which has been given greater powers under the European Treaty to influence policy decisions. But even so, it is difficult to know at this stage to what extent current concerns about agricultural production systems will translate into fundamental policy reform. Past experience should not make us too optimistic. Despite the degree of attention given to the role of agri-environmental policy, expenditure on this aspect of the CAP still represents approximately 5 per cent of the total. Some 90 per cent of support expenditure continues to be linked in some way with production, and the balance of expenditure in 2000 was not expected to change significantly in the immediate future (Commission of the European Communities 2000). But BSE and to a lesser extent the recent Foot and Mouth epidemic, together with a variety of food scares, such as the adulteration of wine, and concerns about the adoption of new technologies, such as GMO, do appear to have made a significant impression on consumers who perceive intensity of production to be associated with fundamentally flawed agricultural production methods. Food quality has become a major concern amongst EU consumers. The growth in demand for organic products, the increased interest in niche products and farmers' markets and the demand for traceability through marketing channels, all signal consumer responses to these concerns. The environmental criticisms of the CAP take an even greater force when they are combined with the ever-present pressures on the EU's agricultural budget, which makes up for more than 50 per cent of the EU's overall budget.

The envisaged enlargement of the EU by Central and Eastern European Countries (CEEC) planned over the next 5 years presents a severe dilemma, especially with regard to the use of direct income support payments. It would not be feasible to simply make these payments available at current levels to farmers in the accession states. But, should they not be offered in CEEC but be retained elsewhere in the EU, this would mean that the CAP no longer is a common policy (Buckwell 1999).

Finally, it is well understood in Europe that the Uruguay Round Agreement on Agriculture was just the first step in a process of agricultural trade

liberalisation which will require further reductions in the level of agricultural support. In further discussions, trade negotiators are likely to focus their attention on the EU's direct income support payments. These have been increased significantly since the 1992 CAP reform, and again in 1999, but they fail to meet the current criteria for placement in the WTO's Green Box. More recent proposals from the European Commission (Commission of the European Communities 2002) would, if implemented, further decouple payments from production and go further towards meeting the requirements. They also propose to limit the total sum payable to a farm to EUR 300 000.

However, this presages a major debate about the role of agricultural polices, increasingly cast in terms of multifunctionality (Ervin 1999; Anderson 2000; Hodge 2000; Latacz-Lohmann and Hodge 2001; OECD 2001). There remains a need to sift through the objectives and arguments in order to establish a coherent and rigorous framework for the development of policy. Such a framework would see a legitimate role of policy in correcting for missing markets in the provision of rural environmental quality. Where such policies pursue legitimate objectives and promote cost-effective responses, they can improve resource allocation and thus be trade-correcting.

6.2 Shifting the basis of support

This emerging framework calls for a (further) re-orientation of the CAP in the medium-term future. It has been suggested that environmental payments will be one of the few politically sustainable forms of government support to agriculture in the years ahead and that agri-environmental policy is set to become a more dominant part of the rural policy scene (Buckwell 1997; Potter 1998).

First, paying farmers for the provision of positive environmental goods and services above a reference level environmental standard is politically more defensible than paying farmers as commodity producers. Such a shift of policy would thus address much of the internal criticisms levelled at the present CAP. Second, carefully designed agri-environmental schemes are compatible with the WTO's Green Box and thus are likely to be immune from attacks in future trade rounds. Third, a green CAP would solve the problems resulting from the accession of Central and Eastern European Countries (CEEC). While it would be difficult to justify an extension of the present CAP to accession states, there is no reason to deny them payments for conserving and developing their environmental capital. In fact, West European environmentalists have already identified a number of 'high natural value farming systems' in CEEC and lobby for their conservation (Bignal and McCracken 1996). There is also a perceived backlog of environmental cleanup. Documented evidence of pollution and soil

contamination from the communist era should provide ample justification for channelling agri-environmental funds to CEEC.

6.3 Impediments on the way

The movement towards a green CAP is not without problems. First, while attitudes have shifted, questions remain about the willingness and ability of farmers to take on the role of environmental stewards. Farmers in the south favour a more productivist policy to bring their agricultures onto an equal footing in terms of productivity with northern Member States. Similarly, farmers in CEEC expect agricultural policy to support them through the phase of agricultural modernisation and intensification before they can be expected to show serious interest in and concern for the environment.

Second, if support is to be based increasingly on environmental performance, a vast increase in the administrative costs of the CAP may be expected. Unless this is adequately funded, resultant low levels of environmental effectiveness may lead to questions about the credibility and WTO compatibility of a policy system based on environmental performance.

Third, policy makers, especially those who are not fully committed to a green approach, may face strong incentives to use environmental payments as income support. This suspicion is widely held among Cairns Group countries and so agri-environmental support will come under the close scrutiny of trade negotiators.

Environmental Cross Compliance might, in principle, be seen as an alternative to the systematic development of targeted environmental policy mechanisms. But even though it may offer a short-term cure to some of the domestic disquiet over the present CAP, it is unlikely, in the face of the other pressures, to make it politically sustainable in the longer term. As already noted, ECC involves the risk of tying environmental safeguards to a system of payments with a limited shelf life. The reluctance of many Member States to put cross compliance into practice suggests that there is indeed rather little enthusiasm for this approach.

6.4 Towards an environmental CAP

Contracting with farmers for the provision of environmental goods and services has become the dominant instrument of EU agri-environmental policy over the past 15 years. While agri-environmental payment schemes may be seen to represent 'quasi-markets' for public goods which correct for a missing market, their environmental effectiveness is often undermined by information asymmetries between farmers and government agencies. The problem is compounded by the fact that some schemes are poorly targeted

and are sometimes coupled with more traditional goals of agricultural policy such as income support and supply control.

We must recognise that EU agri-environmental policies are at a relatively early stage in their development. The idea of government contracting on behalf of the community to enhance the quality of the rural environment is a novel one, and there is much to learn about the best methods. In order to meet the challenges that lie ahead, agri-environmental policy must be developed further.

6.5 Increasing cost-effectiveness and promoting efficiency

The efficiency of these programs may be enhanced by a greater emphasis on targeting. Agri-environmental schemes could be designed more precisely to reward expected benefits. In many cases this can be through spatial targeting based on natural conditions or in some circumstances, historical associations. But in other locations, especially in areas most accessible to the public the demand side may be more important. There is no environmental case in offering environmental contracts in areas where expected benefits are not valued.

There is also scope to offer conservation contracts on the basis of competitive bidding. Similar to the approach of the Conservation Reserve Program in the USA, farmers would tender bids to the environmental agency stating the amount of payment they would require for participation in the scheme. Latacz-Lohmann and Van der Hamsvoort (1997) have shown that competitive bidding could reduce the problem of overcompensation of farmers and significantly enhance the effectiveness of public spending for environmental improvements.

Greater attention could also be given to a wider range of mechanisms (Hodge 2001). The provision of information to consumers through product traceability, labelling and local production, innovative property institutions, such as Conservation, Recreation and Amenity Trusts and conservation covenants, and the establishment of quasi-public funds dedicated to local environmental enhancement all have the capacity to make a contribution towards the enhancement of rural environments.

Clearly, the measures suggested would involve considerable administrative effort. The search must be for optimal rather than minimal transactions costs. The levels of transactions costs have been reduced as more is learnt about the implementation of these schemes. But there is also very wide variation between the costs of different schemes, suggesting scope for more efficient administration (Falconer and Whitby 1999). Hodge (2001) suggests that some element of competition be introduced into the administration of the schemes, for example by putting the task out to tender.

Finally, there may be a case for greater EU scrutiny of scheme implementation at Member State level to ensure, among other things, that only practices that go beyond good agricultural practice are supported. More generally, a checklist of 'good practice in policy implementation' could be developed. This may add to the credibility of the policy and prevent concern about distortion of the market and unfair competition between farmers receiving different levels of aid.

6.6 'WTO proofing' agri-environmental policy

Agri-environmental programs may either tend to reduce or to increase agricultural output, depending on the technical relationships between the two categories of output. This may give rise to conflicts in future trade talks. A distinction must be made between 'trade-correcting' and 'trade-distorting' agri-environmental policies. Clearly, the first step is to demonstrate their relative cost effectiveness and environmental efficiency (e.g., Ervin 1999). However, this may not be sufficient. The critical issue seems to be that of strategic behaviour of governments. If 'subjective' environmental benefits are widely used to justify Green Box classification, there is a danger of institutionalising protectionist environmental policies. At the same time consideration should be given to the potential impacts of policies on less developed countries (e.g., OECD 2001). This raises the question of how countries can provide credible evidence that their agri-environmental policies are genuine and not green-label protectionism. A framework will have to be developed and agreed internationally for deciding what policies qualify for placement in the Green Box. The present Green Box criteria seem to be too narrow in requiring policies to have no, or at most minimal, effects on production. Where environmental benefits depend on the maintenance of agricultural production systems that can not be profitable at world prices and in the absence of other means of generating those benefits, some impact on production is inevitable.

A big challenge facing EU trade negotiators will be to try to reconcile different views on, and perceptions of, agriculture and its role for rural environments and rural communities. The 'Old World' view of a 'multifunctional' agriculture fulfilling the social functions of maintaining the cultural landscape, providing amenity goods, sustaining rural communities and safeguarding rural environmental capital may sound a rather alien concept to 'New World' trade negotiators (Hodge 2000). The rural environment in Europe is a 'lived-in' environment for the vast, non-agricultural, majority of the population that is a product of particular agricultural production systems. Landscapes and habitats have coevolved with agricultural systems and the communities that have depended on them. Maintaining the

flow of amenity benefits will require payments to agriculture in order to maintain the particular processes that support the environmental quality. This may conflict with views in Australia and the USA where agriculture is largely a mono-functional industry and where an important concern of agri-environmental policy is to protect the rural environment as a productive resource to be used by an internationally competitive agricultural sector. This is not to suggest that there are not rural environmental policies in other countries that are directed towards the protection of habitats and biodiversity for non-productive reasons. But generally, in a 'New World' context this reflects a concern with the equity to future generations of depleting stocks of natural resources such as soil fertility, native vegetation and biodiversity, rather than with promoting and maintaining particular agricultural systems. Policy approaches may be different where in one case the objective is to maintain rural landscapes and in another where land use change may be an important means of achieving the objective of conserving resource stocks.

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