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*On Agri-environmental Policy and the Pandora's Box
Keeping the Lid on Pandora's Box.*

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UK Agri-Environmental Policy and the GATT Green Box: Keeping the Lid on Pandora's Box.

Abstract

In this paper, the consistency of UK agri-environmental policy in relation to the requirements of the GATT Agreement on Agriculture is examined with particular reference to the general and specific criteria within Annex 2. Jointness in the production of agricultural and environmental output is used to explain the form of agri-environmental policy. UK Environmentally Sensitive Areas are examined and the trade distorting effects of agri-environmental policy considered. It is argued that the appropriate test of trade consistency of agri-environmental policy is social cost-benefit analysis and not changes in the composition of agricultural production.

JEL Classification : Q1, Q2, F0.

Key Words : agri-environmental policy; GATT; Agreement on Agriculture; jointness.

1. Introduction

With the conclusion of the Uruguay Round (UR) of the GATT in 1993, the process of unravelling existing agricultural price support regimes began. The UR was the first time that agriculture was included and specific details relating to agriculture are found in the Agreement on Agriculture (AA) (GATT, 1994, pp 39-68). An important part of the AA is the acceptance of specific policy initiatives and instruments which provide government support payments to farmers and do not have to be included in a country's Aggregate Measure of Support (AMS).¹ The criteria and conditions which a policy offering support payments needs to satisfy to be exempt from inclusion in the AMS are detailed in Part IV, Article 6.5 (Blue Box) and Annex 2 (Green Box) of the AA.² An important area of policy accommodated within the green box and, the focus of this paper, are the incentive based farm level environmental programmes.

The name typically given to policies covered by this sub-section of the GATT is agri-environmental. Agri-environmental policy is relatively new and the UK has been particularly active in developing this type of mechanism. Indeed, the recent UK government rural white paper (HMSO, 1995), firmly placed agri-environmental objectives at the top of the rural policy agenda. The reason for the introduction and development of agri-environmental policy is that over the last three decades, the drive for productivity growth has seen a

¹ The AMS is a country specific measure of domestic support of the agricultural sector.

² In this paper Green Box policies refers only to those in Annex 2. The Blue Box contains EU set-aside and US deficiency payment policies. For more on the terminology of the UR AA see IATRC (1994).

significant intensification of agricultural production (eg. more intensive grazing systems; higher stocking densities; and greater input use). Intensification has led to the destruction of flora and fauna at a hitherto unprecedented rate (Winter, 1996). Policy aims to prevent excessive environmental degradation and destruction, by promoting agricultural practices that are environmentally friendly.

In this paper, the focus of interest is the general and specific criteria of the AA in relation to agri-environmental policy. Annex 2 of the GATT AA contains both sets, criteria that relate to the specific policy categories, such as agri-environmental policy, and general criteria that apply at a more fundamental international trade distorting level. With the existence of both sets of criteria it is feasible that national policy initiatives will conform to the policy-specific criteria but that they may transgress the general criteria. However, this depends upon how agri-environmental policy is assessed and the meaning and measure of trade distortion that is used to evaluate policy.³ To examine these issues, UK agri-environmental policy is examined and, in particular, the Environmentally Sensitive Areas (ESAs) scheme is considered in detail. It will be argued that agri-environmental policy should be evaluated on the basis of social cost-benefit analysis and not simple production volume effects.

The paper begins with a consideration of the GATT AA, particularly Annex 2 and the green box, and the general and specific criteria that need to be satisfied by policy. Then the literature that has assessed the environmental aspects of the GATT is reviewed. Next UK agri-environmental policy is considered and, in order to facilitate the analysis, a theoretical description of the relationship between agriculture and the environment is provided. This allows for an intuitive appreciation of the operational form that agri-environmental policy takes. A review of findings about the implementation of ESAs is provided and the implications for the AA discussed.

2. The AA and Agri-Environmental Policy

Until the UR, agri-environmental policy has been able to evolve without taking account of international trade issues. With the advent of the UR this is no longer true. There is now the need to assess policy to ensure compliance with the conditions of the AA. The important part of the AA in relation to agri-environmental policies is covered by the green box. The green box contains policies which can continue to receive support payments and are exempt from the AMS reduction commitments. These policies are protected from international challenge by the GATT. If a policy is not automatically accepted into the green box (enters the "amber" box), it becomes subject to the reduction commitments as part of a country's AMS. To qualify for green box status policy has to be judged not to stimulate production or to distort trade. This aspect of the AA has no counterpart in GATT treatment of policies outside agriculture, an implicit recognition of the difficulties encountered in

³ MacLaren (1996) provides an interesting discussion on the broader theoretical issues on the meaning and measurement of trade distortions and agricultural policy.

reaching agreement.

The details of green box qualification are in Annex 2 - Domestic Support: The Basis for Exemption from Reduction Commitments - of the AA. The *general* conditions that must be satisfied, described in Sub-section 1, are as follows:

"Domestic support measures for which exemption from the reduction commitments is claimed shall meet the fundamental requirement that they have no, or at most minimal, trade-distorting effects or effects on production. Accordingly, all measures for which exemption is claimed shall conform to the following basic criteria:

- (a) *the support in question shall be provided through a publicly-funded government programme (including government revenue foregone) not involving transfers from consumers; and,*
- (b) *the support in question shall not have the effect of providing price support to producers;*

plus policy-specific criteria and conditions as set out below." (GATT, 1994, pp 56).

These criteria essentially allow for decoupled support payments funded by tax revenue.⁴ This type of policy is allowed because income support is still a primary objective of domestic agricultural support programmes. The approach recognises that trade distortions are a by-product of the instrument - price support - previously used to achieve income support. With a public interest social welfare function, it is in the interest of all countries to reduce the distortions of support, but not necessarily to stop support payments to farmers.⁵

The *specific* conditions that environmental programmes must satisfy are covered in sub-section 12 - Payments Under Environmental Programmes - are as follows:

- (a) *Eligibility for such payments shall be determined as part of a clearly-defined government environmental or conservation programme and be dependent on the fulfilment of specific conditions under the government programme, including conditions related to production methods or inputs,*
- (b) *The amount of payment shall be limited to extra costs or loss of income involved in complying with the government programme.* (GATT, 1994, pp 62)

Under the *specific* conditions, payments that accompany approved agri-environmental schemes and pay farmers the full cost of complying with environmental requirements are allowed.

Already there is a large literature that deals with the impact of the UR on agriculture. However, little attention has been given to agri-environmental policy allowed under the green box. Analysis tends to consider the green box without analysing agri-environmental issues explicitly. For example, both Anderson (1995) and Tanner (1996) note that many forms of support do not need to be included by a country in its calculation of AMS as a result of the green box. Both note that the use of the policy instruments allowed under these conditions will

⁴ Sub-section 6 of Annex 2 details decoupled income support payments. See Reinzel (1989) for a historical overview of the concept of decoupled support.

⁵ de Gorter and Harvey (1990) explain why distortion and support are not the same thing.

increase as transfers to agriculture via price supports become more difficult. MacLaren (1995) provides an overview of the implications of the GATT for Australia and New Zealand. The environmental issues considered by MacLaren relate to the Agreement on Sanitary and Phytosanitary Measures. There is nothing directly related to the likely trade implications of the agri-environmental policies allowed under Annex 2. Josling (1994) notes that environmental payments provide a neat method by which to offer decoupled income support payments.⁶ Harvey (1995) also recognises this possibility, but as he points out, there is no logical relationship between income support and environmental output: the frequency distributions of compensation payments and environmental output payments will be different.

However, Tobey and Smets (1996) argue that it is difficult to distinguish between agricultural payments for environmental output and subsidies for other purposes. The way to avoid arguments over the objectives of policy is to make sure that the objectives are properly targeted. It would be beneficial if the green box was truly that - payments passing a test of being positively correlated with environmental improvement. Policy will be more effective if it is transparent, with clear, simple objectives and no room for ambiguity. But, the size of an improper environmental subsidy that constitutes a trade distortion is not clear. The AA (Article 6.4) views a 5% subsidy of total production of a basic agricultural product as a threshold, as this is considered to cause serious prejudice. Tobey and Smets (1996) found that payment levels at present in agriculture do not exceed 5%, but this is likely to increase as more policy and payments are made through the green box.

3. UK Agri-Environmental Policy

Given the focus of this paper on the general and specific criteria of Annex 2 in relation to the implementation of agri-environmental policy, it is useful to base the analysis on policy presently in operation. In the UK at present the most important agri-environmental policy is the ESAs scheme. In this section the basic operational features of ESAs are described and the findings of the socio-economic monitoring of policy assessed in terms of the general and specific criteria. However, before ESAs are analysed it is useful to provide a conceptual justification for the form that policy takes. This will not only help to explain the reasons behind the construction of policy, it will also assist in the subsequent discussion.

3.1 *The Relationship Between Agriculture and the Environment*

Environmental externalities occur indirectly as a result of input and output decisions by farmers. Because of the

⁶ The question of how to determine the allocation of decoupled payments is not new (Grennes, 1988 and OECD, 1990). Typical problems are; unattractive to policy makers as degree of budgetary support is explicit; and there is a welfare stigma attached to direct payments.

jointness in the production processes, whilst agricultural practices remain relatively extensive the relationship between agriculture and the environment⁷ is complementary. With increasing intensity of production this changes to a competitive relationship - more agricultural output is derived at the expense of the environment. Society is demanding ever greater environmental quality and amenity value from the countryside and economic efficiency requires that agriculture functions consistently with this demand. Less intensive agricultural practices are necessary to produce the desired environmental habitat - semi-natural. That is, agri-environmental policy does not require land abandonment, but rather less intensive land use.

An example of agricultural intensification is the significant growth in silage production for feeding livestock. This has led to a decline in the population of ground nesting birds, which are vulnerable to the earlier, more frequent cutting regime of silage production, compared to traditional haymaking. Modern grazing systems also produce a more uniform sward, allowing higher stocking densities but contributing to the lack of breeding success and population declines of many bird species (eg. redkite). There has also been habitat modification with the disappearance of "traditional" farming methods. Examples of this are the removal of hedges, copses and tress, and the improvement of rough grazing areas such as moorland, downland and wetland (swamp). These environments previously maintained a rich composition of flora and fauna dependent upon long established methods and intensity of land management. The new intensive land management practices have produced an environment of low ecological and scenic value.

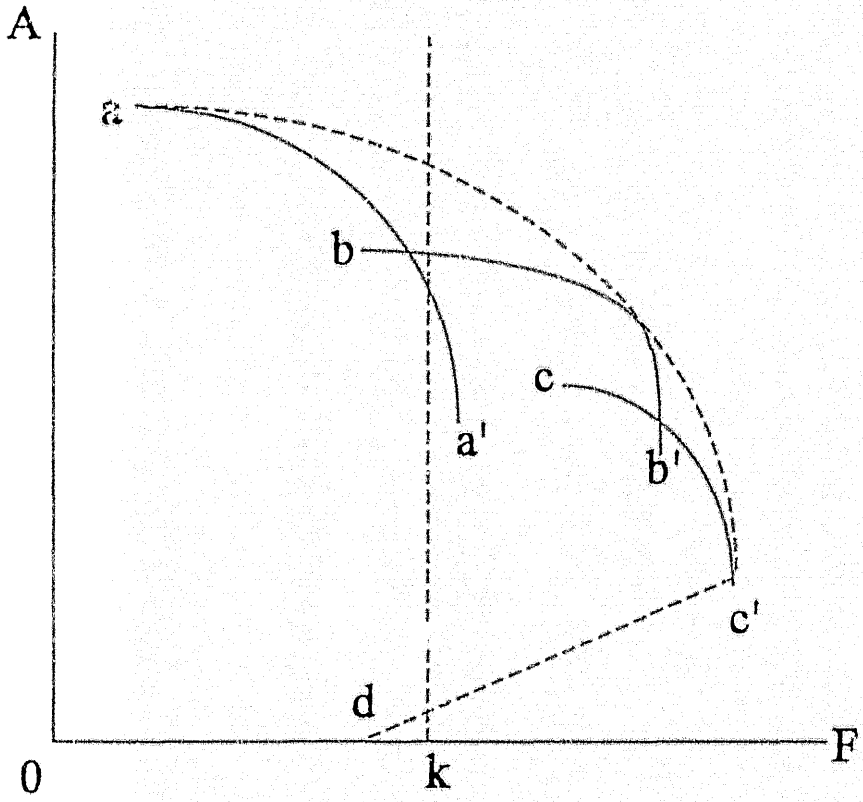
Certain agri-environmental policies concentrate on the retention of extensive agricultural systems, others the reintroduction of less intensive agricultural management systems. Some provide incentives for explicit environmental outputs, such as hedges, stone walls, native orchards and other desirable environmental and conservation features. Most recognise the jointness in production that exists between extensive agricultural production and the environment. A simple way to describe the jointness in production⁸ between agricultural output and the environment is provided by Russell (1993). Consider the relationship shown in figure 1 below between A, annual agricultural output and E, the annual flow of rural environmental goods and services.

⁷ The environment here is defined in its broadest sense - McInerney (1986) coined the phrase, CARE goods (conservation, amenity, recreation and environmental).

⁸ See Weaver (1996) for a theoretical characterisation of the relationship.

Figure 1

Agri-Environmental Trade-Off Frontier



The flow of environmental goods and services changes the stock of rural environmental capital which consumers demand. There is a brake-even point, k , where agricultural output does not alter the existing capital stock of the rural environment. However, if $F > k$ the stock is being augmented and if $F < k$ the stock is being depleted. There are several agricultural technologies available for producing output and as the technology becomes more intensive the impact upon the flow of environmental goods and services is negative. Following Russell, three possible technologies are depicted in figure 1; intensive (aa'); traditional (bb') and extensive (cc'). There is a curve that describes the limit of the available production set, the agri-environmental production frontier ad . ad is assumed to be negatively sloping and concave thus defining a convex production technology. Point d represents the idea of land abandonment which is considered to lead to some deterioration in the capital stock. This is because, as already noted, the preferred environmental state is semi-natural and this depends upon the continued existence of farming.

Conceptually, agri-environmental policy is attempting to move farmers to a level of production that yields a non-negative environmental flow i.e. $F \geq k$. This can be achieved in two ways; either by moving to a less intensive production technology or by employing existing technology less intensively. In figure 1 this could be moving from aa' to bb' . Examples of this is going from silage to haymaking, or the conversion of arable land to grassland. Alternatively, a farmer might be employing technology bb' in figure 1, but operating near to b which might be equivalent to over-grazing moorland. In this case extensification of existing practices is all that is necessary to bring about the required change. Ideally, for the chosen production technology it would be preferred if a farmer was operating on or near the agri-environmental production frontier.

3.2 Environmentally Sensitive Areas⁹

3.2.1 Policy Description

In the UK the most important agri-environmental policy is the ESAs scheme.¹⁰ They are the *flagship* of UK agri-environmental legislation (Whitby and Lowe, 1994) with an expected budget of £45 million in 1995/96. They are designated geographical areas, associated with a particular farming system or landscape type such as lowland heaths, grassland and varied upland farming areas. What they have in common is a landscape and ecology critically dependent on the existing agricultural systems, typically livestock based. There are 30 ESAs operating in the UK, a further 9 have been proposed and there are nearly 100 throughout Europe as a whole.

The fundamental objectives of ESAs are the conservation and maintenance of the landscape, wildlife and historic

⁹ ESAs came into existence under Article 19 of Council Regulation 757/85 - Improving the Efficiency of Agricultural Structures.

¹⁰ For a general review of UK agri-environmental policy see Fraser and Russell (1996).

values via the implementation of appropriate agricultural management practices. Participation is voluntary with standard incentive payments, taking account of profits foregone. Payments are prespecified and are offered on a per hectare or per unit of work performed basis and are the same for all eligible farms. Payments are made annually in return for following specified environmental management guidelines. The guidelines encompass a range of daily and seasonal farming activities such as input restrictions on fertiliser and pesticides, stocking rate limitations and the maintenance of existing features such as hedges, walls, woods, etc. ESAs are becoming progressively more sophisticated with more restrictive or demanding the options. ESAs now operate for ten years compared to five when originally introduced.

The operational advantage of ESAs is the coverage of a significant continuous area of land with the possibility of having an impact on landscape quality. Standard payments in combination with general management requirements make administration and operation simple. The main disadvantage is the fixed payment - the scheme often overcompensates farmers where individual compliance costs are low. Crabtree (1991) noted that most entrants into the scheme are over-compensated and the corollary of this is a high marginal cost of securing additional uptake. There is no effort to offer contracts to farmers that are incentive compatible (Chambers, 1992). Thus, for efficiency, it is important to ensure that the farms in an ESA have an homogenous opportunity cost of participation, producing a more cost effective take-up. Also the targeting of payments is important if the correct farms are to enter.¹¹

3.2.2 ESAs in Operation

To assess the consistency of ESAs in relation to the general and specific criteria it is necessary to examine the available information about the operation of existing ESAs. In this paper The North Peak ESA is considered in detail with the findings from other areas also assessed. The findings for the North Peak ESAs analysed here are based on the work of Froud (1994).

The North Peak ESA in Derbyshire, approximately 50,000 hectares in size, was originally designated in 1988 and redesignated in 1993. It is an upland plateau made up of a mosaic of heather, shrub and grass covered peat moorland of high conservation value in terms of both flora and fauna. Part of the ESA is enclosed land, often improved pasture bordering the moorland (inbye). The main agricultural activity is the rearing and selling of lambs with some cattle. Intensification of production - increased stocking rates and the production of silage - has led to a serious impact upon the previously delicate balance between farming and the environment. Overstocking mostly affects the moorland especially during the winter and silage production has increased as traditional haymaking has declined.

¹¹ For this reason the Countryside Stewardship Scheme might be a more effective policy mechanism because of its use of discretion in terms of participation and payments (Fraser, 1996).

Under the original scheme there were two tiers which land could be entered into. With tier 1, for moorland, the main management restriction was that farmers needed to remove 25% of their flock between the 31st of December and the 1st of April. For the inbye, farmers could not increase existing levels of inputs (fertiliser) without permission. For adhering to these restrictions a farmer received £10 per hectare per annum. For land entered into tier 2, it was necessary to remove stock from the improved pasture 7 weeks prior to cutting for silage which could not commence before the 16th July. Stocking rates on this land could not exceed more than 2 ewes and followers per hectare per annum and input use (eg. drainage, liming) avoided if possible. On the moorland a stocking rate of 1 ewe and 1 follower per hectare was required. For land entered in tier 2 a farmer received £20 per hectare per annum. With the redesignated scheme there are enhanced payments for more specific and targeted management prescriptions.

Froud (1994) found that the level of participation in the original scheme was 86%. The average farmer joining the scheme could expect an annual payment of £6650 and this could be obtained without having to change existing stocking levels. This was because the management prescription was set at a level equivalent to existing practices. The effect on livestock numbers was a slight reduction in sheep. There was also a substitution of sheep for cattle. Initial environmental monitoring revealed little change to flora and fauna, but much of the uncertainty attached to this can be attributed to the short period of monitoring and the time period the scheme had operated for.

Although the North Peak is not representative of all ESAs its results are typical of the basic impacts of the scheme more generally. Most importantly the impact upon livestock numbers has only been marginal. For example the Breadalbane Scheme (Skratt, 1994) found that the ESA merely facilitated a continuation of existing agricultural practices. Saunders (1994) found a similar outcome in the Pennine Dales ESA. In the Cambrian Mountains (Hughes, 1994), it was found that only 17% of farmers need to reduce overall farm stocking rates as a result of joining the scheme. The significance of the payments in the Cambrian ESA are also interesting. It was estimated that average net annual value of ESA payments was order £2200 which amounted to about 15% of annual net farm income. Given the variability of income in this farming system the value of payments in any year could range between 10 and 30 percent.

For ESAs based in lowland areas such as The Suffolk River Valleys, South Downs and Breckland for example, the change to the existing mix of agricultural output was even more pronounced. In many lowland ESAs the conversion of land to arable farming was perceived either to be a threat or had already taken place. These schemes aimed to prevent this conversion from happening and to positively encourage the reestablishment of permanent ley pastures. Not surprisingly in this context the scheme had a significant impact upon the number of livestock. In the Suffolk River Valleys ESA for example, 5,136 hectares of land was converted from arable

to grassland by 1991, with a 5,500 increase in the number of sheep.¹²

4. Discussion

Given jointness in the production of agricultural and environmental outputs, the implementation of agri-environmental policy based upon sustainable management systems needs to be assessed carefully in relation to the AA general and specific criteria. In this section the general and specific criteria are considered in terms of the meaning of trade distortions resulting from the implementation of agri-environmental policy.

The key general conditions to be met by agri-environmental policy in order to qualify for green box status are that it has "no, or at most minimal, trade distorting effects or effects on production." (GATT, 1994, pp 56). It is easy to understand why these conditions received support in the UR debate on defining acceptable forms of income support for agriculture. They guarantee that any impacts of these policies on trade and markets are minimised. The effects are small because the policies are quasi-lump sum, which means they also have the advantage of being consistent with economic efficiency.

While lump-sum characteristics with minimal effects on trade and production are desirable - for efficiency and for international relations reasons - in policies intended to support farm incomes, the situation is different for policies directed at achieving environmental objectives. Depending on the nature of the relationship between the output of agricultural and environmental goods, efficient environmental policies could result in an increase or decrease in agricultural production. Even when the relationship between agriculture and the environment is competitive, increasing the production of environmental goods may require changes in the nature and composition of agricultural output - substitution of livestock for arable as is the case with some lowland ESAs - that exert downward pressure on prices for some outputs of agriculture but also upward pressure on others.

There are therefore, necessary questions to be raised about the logic and the interpretation of the requirements for agri-environmental policies to be included in the green box. Two questions are most fundamental. What conditions do agri-environmental policies need to meet if they are to be consistent with economic efficiency? Do the conditions for inclusion of policies in the green box meet those conditions?

Firstly, an efficient agri-environmental policy is one that targets the variable of interest directly, and which does not have unwanted side-effects. Sometimes the target variable is multi-faceted and complex - for example, hedgerows or species rich meadows, may be valued for their visual effects and for the wildlife that they support. In such cases, efficient policy making is especially difficult - the more so if the value placed upon the

¹² For a discussion on the future prospects for ESAs see Whitby (1994) and Winter (1996).

environmental outputs differs across locations. Whether ESAs allow efficient achievement of environmental benefits has been questioned. Whitby and Lowe (1994) argue that the environmental benefits remain uncertain, although those benefits are the criterion against which the scheme should be judged. Related to this concern, for the Suffolk River Valleys ESA, Russell (1994) suggested that farmers might delay re-entry into the redesignated ESA because they would like to boost the productive capacity of their land - for example, by topping up soil nutrient levels. The questionable efficiency with which ESAs have achieved their key policy objectives raises another important issue. Should other countries be allowed to assess the efficiency of policy? This raises the question of national autonomy of policy choice and implementation - a likely source of tension. However, as long as the general criteria are satisfied and all negative externalities are internalised, does it really matter to other countries how a country treats its environmental capital stock?¹³

Secondly, at a conceptual level, and for the purpose of evaluating the international guidelines for environmental policy agreed to in the AA, the consistency of the requirements for green box status with efficiency in environmental policy is of greater importance than whether UK agri-environmental policy accords with the general criteria. There are three main points to be made on this, "higher level" matter. First, the effect of agri-environmental policy on agricultural production and on trade - volume effects - are inappropriate tests for assessing the efficiency of policy.¹⁴ The appropriate test is social cost-benefit analysis, not compositional volume effects. The implementation of ESAs illustrates this point. Although the compositional change in output increased the number of sheep in many cases, environmental output also increased, thus leading to an improvement in social welfare.¹⁵ Second, while the generalisation can be offered that the introduction of efficient policies to protect the environment will reduce total agricultural production (a clockwise movement around the agri-environmental... and under conditions of competition, the resulting changes in the composition of agriculture may mean that some agricultural outputs increase. Compositional changes in agriculture will have impacts upon prices and on trade. The effects would be in the opposite direction for outputs that were increased and for those that were decreased. Third, there appears to be no basis in the theory of economic policy for regarding a change in agricultural trade that results from an efficient agri-environmental policy as a *distortion*. It should, rather, be viewed as a market consequence of correcting an environmental externality. As Tangermann (1996) rightly concludes, much will turn on the interpretation of "minimal trade distortion" or "effects on production".

¹³ In the GATT, discrimination based upon production process and method (PPM) is not allowed. An analysis of the US ban on yellowfin tuna by Uimonon (1995) illustrates the difficulties that can be encountered in this area.

¹⁴ But, this is a potential method by which the *trade distortions* of policy might be assessed.

¹⁵ The sheep sector is the most likely to be affected by any trade distortionary effects which might arise from ESAs. However, recent changes to the UK sheep sector (Burrell, 1995) such as livestock headage premium limits and marketing arrangements will minimise the potential distortions.

In terms of the specific criteria, agri-environmental policy is required to limit payments to an amount based upon some measure of profit foregone or the opportunity cost of participation. With ESAs, many farmers who are participating in a scheme are being over-compensated - payments in excess of profit foregone - for the restrictions placed upon them. However, if a country wishes to reward its farmers for the provision of environmental output should this be the concern of other countries? Indeed with introduction of ESAs the impact upon farm income has been positive and it can legitimately be claimed that the payments are rewarding farmers for the production of a public good that has previously gone unrewarded.

Finally, if there is reason to believe that an agri-environmental scheme is trade distorting, however defined or measured, a possible solution might be to see agriculture as an intermediate input in the environmental production process. This would constitute a dramatic and major revaluation of land use not only by society, but also by farmers - their major objective becomes the production of the environment.¹⁶

5. Conclusions

In this paper the likely impact of the AA from the UR for agri-environmental policy has been examined. Particular attention has been paid to the general and specific criteria in Annex 2 of the AA. It is suggested that many of the difficulties that may be encountered with the introduction and implementation of agri environmental policy in terms of the criteria laid down in the AA will result from the interpretation of what is a trade distortion. This point has been illustrated by considering ESAs. It is the case that agri-environmental schemes often operate on the basis of the jointness in production between agriculture and the environment. This in turn means that complying with the conditions of an agri-environmental scheme will have effects upon agricultural production. These effects can take the form of a compositional change of output such as, for example, shifting from cropping to livestock production. It is contended that this new balance of agricultural production which results from the implementation of agri-environmental policy is not trade distorting. If policy is examined in a social cost-benefit framework then this change in the composition of production is welfare-enhancing. During the recent preoccupation with distortions to production and trade caused by agricultural support policies, the fact that welfare-improving domestic policies - including agri-environmental policies - will also impact on production and trade has been neglected. However, whilst the environmental effects of UK agri-environmental policy remain uncertain, critics of this type of policy will lay the charge that the payments forthcoming to farmers are agricultural subsidies. Clearly, it is in the interest of the UK to show beyond doubt that schemes such as the ESAs are delivering environmental improvements and therefore enhancing social welfare.

¹⁶ Not all agri-environmental production is dependent upon continued agricultural production. Many schemes require the explicit production of environmental benefits. e.g. The Farm Woodland Premium Scheme, The Countryside Access Scheme and The Conservation Grants Scheme (Winters, 1996). These schemes are not based upon jointness - production is undertaken independently of agricultural production process.

References

- Anderson, K. (1995). Agricultural Competitiveness After the Uruguay Round. *Review of Marketing and Agricultural Economics*, Vol 63, pp 351-362.
- Burrell, A. (1995). EU Agricultural Policy in 1993-94: Implementing CAP Reform. *Review of marketing and Agricultural Economics*, Vol 63, pp 9-28.
- Chambers, R.G. (1992). On the Design of Agricultural Policy Mechanisms. *American Journal of Agricultural Economics*, Vol 74, pp 646-654.
- Crabtree, J.R. (1991). Policy Instruments for Achieving Conservation Objectives. paper presented to European Association of Agricultural Economists, Environmental Economics Conference, Viterbo, Italy.
- de Gorter, H. and D.R. Harvey. (1990). Agricultural Policies and the GATT: Reconciling Protection, Support and Distortion. Paper to European Association of Agricultural Economics Congress, The Hague, September.
- Fraser, I.M. (1996). Quasi-Markets and the Provision of Nature Conservation in Agri-Environmental Policy. *European Environment*. Vol 6, pp 95-101.
- Fraser, I.M. and N.P. Russell (1996). The Economics of UK Agri-Environmental Policy: Present and Future Developments. Memo, School of Agriculture, La Trobe University, Melbourne.
- Froud, J. (1994). Upland Moorland with Complex Property Rights: The Case of the North Peak. Chapter 5, pp 81-104 in, *Incentives for Countryside Management: The Case of Environmentally Sensitive Areas*, Edited by M. Whitby, CAB International, Wallingford.
- Grennes, T. (1988). Farm-Support Policies Compatible with Trade Liberalization. *The World Economy*, Vol 9, pp 109-117.
- GATT (1994). The Results of the Uruguay Round of Multi Trade Negotiations. The Legal Text. GATT Secretariat, Centre William Rappard, Rue de Lausanne 15 1211 Geneva 21, Switzerland.
- Harvey, D. (1995). European Union Cereals Policy: An Evolutionary Interpretation. *Australian Journal of Agricultural Economics*, Vol 39, pp 193-217.
- HMSO (1995). Rural England: A Nation Committed to a Living Countryside. Department of the Environment, Ministry of Agriculture, Fisheries and Food, Cm 3016, London.
- Hughes, G. (1994). ESAs in the Context of a Culturally Sensitive Area: The Case of the Cambrian Mountains. Chapter 7, pp 135-152 in, *Incentives for Countryside Management: The Case of Environmentally Sensitive Areas*, Edited by M. Whitby, CAB International, Wallingford.
- IATRC (1994). The Uruguay Round Agreement on Agriculture: An Evaluation. The International Agricultural Trade Research Consortium, Commissioned Paper Number 9, Department of Agricultural Economics, University of California at Davis.
- Josling, T. (1994). The Reformed CAP and the Industrial World. *European Review of Agricultural Economics*, Vol 21, pp 513-527.
- McInerney, J.P. (1986). Agricultural Policy at the Crossroads, in Gilg, A.W. (ed), *Countryside Planning Yearbook*, Volume 7, pp 44-75, Geo Books, London.
- MacLaren, D. (1995). The Uruguay Round Agreement on Agriculture: A New World Order for Agricultural Trade? *Review of Marketing and Agricultural Economics*, Vol 63, pp 51-63.

MacLaren, D. (1996). Trade Distortions and Policy Instruments: How Should the Effects be Measured? Paper presented to the 40th Annual Conference of the Australian Agricultural and Resource Economics Society, University of Melbourne, 13-15 February.

OECD (1990). Reforming Agricultural Policies: Quantitative Restrictions on Production, Direct Income Support, OECD, Paris.

Reinsel, R.D. (1989). Decoupling: It's Not a New Issue. *Choices*, Third Quarter, pp 16-19.

Russell, N.P. (1993). Efficiency of Farm Conservation and Output Reduction Policies. *European Review of Agricultural Economics*, Vol 20, pp 315-326.

Russell, N.P. (1994). Grassland Conservation in an Arable Area: The Case of the Suffolk River Valleys. Chapter 2 pp 25-40 in, *Incentives for Countryside Management: The Case of Environmentally Sensitive Areas*, edited by M. Whitby, CAB International, Wallingford.

Saunders, C. (1994). Single-Tier System with Many Farms Partly Outside the ESA. The Case of the Pennine Dales. Chapter 3 pp 41-60 in, *Incentives for Countryside Management: The Case of Environmentally Sensitive Areas*, Edited by M. Whitby, CAB International, Wallingford.

Tangermann, S. (1996). Implementation of the Uruguay Round Agreement on Agriculture: Issues and Prospects. Paper presented to Annual Meeting of Agricultural Economics Association, Newcastle-Upon-Tyne, March.

Tanner, C. (1996). Agricultural Trade Liberalisation and the Uruguay Round. *Australian Journal of Agricultural Economics*, Vol 40, pp 1-35.

Tobey, J.A. and H. Smets. (1996). The Polluter Pays Principle in the Context of Agriculture and the Environment. *The World Economy*, Vol 19, pp 63-87.

Uimonen, P.P. (1995). Trade Rules and Environmental Controversies During the Uruguay Round and Beyond. *The World Economy*, Vol 16, pp 71-86.

Weaver, R.D. (1996). Prosocial Behaviour: Private Contributions to Agriculture's Impact on the Environment. *Land Economics*, Vol 72, pp 231-247.

Whitby, M. (1994). What Future for ESAs? Chapter 11, pp 253-272 in, *Incentives for Countryside Management: The Case of Environmentally Sensitive Areas*, Edited by M. Whitby, CAB International, Wallingford.

Whitby, M. and P. Lowe. (1994). The Political and Economic Roots of Environmental Policy in Agriculture. Chapter 1, pp 1-24 in, *Incentives for Countryside Management: The Case of Environmentally Sensitive Areas*, Edited by M. Whitby, CAB International, Wallingford.

Winter, M. (1996). *Rural Politics. Policies for Agriculture, Forestry and the Environment*. Routledge, London and New York.