Centre for Agricultural Strategy

Agricultural policy and the environment

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3 Environmental aims in UK agricultural policy

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INTRODUCTION

This paper addresses the relationship between agriculture and the environment in the United Kingdom (UK), particularly the present and future role of agricultural policy in promoting environmental aims.

In common with all industrialised countries, the relative economic importance of agriculture in the UK is declining. The industry's share of Gross Domestic Product (GDP) is now about 1.5% and its share of the work force around 2%, but it continues to dominate land use. While agricultural production remains a major economic activity, since the mid-1980s environmental objectives have been given increasingly high profile in UK agricultural policy. This has been in response to growing concerns about a wide range of environmental issues, such as water and air quality, waste management, marine pollution (not dealt with in this paper) and, more recently, the 'greenhouse effect' and ozone-layer depletion.

DEVELOPMENTS

Environmental issues are so wide-ranging in scope that they impinge on virtually all interests and activities. The state of the environment is so fundamental to quality of life it is small wonder that it engenders a high degree of interest and passionate debate. Agriculture and forestry which together cover more than 90% of the land surface of the UK are at the heart of this debate. Inevitably a range of views is held in the European Community (EC) and even within the UK itself there are differences of opinion about where to strike the balance between reliability and cost of food supplies on the one hand and environmental preservation/enhancement on the other.

Until the mid-1980s the balance struck generally favoured food production and farm income support.

For some time now in response to growing EC food surpluses and the high costs of agricultural support the UK Government has been in the vanguard of attempts to reform the Common Agricultural Policy (CAP) by reducing the cost of agricultural production, curtailing the levels of support and protection and generally promoting the role of market forces in agriculture. These developments, coupled with expected further improvements in agricultural technology and efficiency, have led commentators to consider that by the year 2000 there could be upwards of 1 million hectares – some would say much more – of farmland in the UK potentially surplus to food production needs.

In the UK itself there has been a sea-change in the direction of agricultural policy and a new watershed was reached in the mid-1980s. In 1985 fundamental changes were made to the Capital Grants Scheme in order to protect and enhance the rural environment and in the following year the Agriculture Act imposed a legal duty on agricultural Ministers to balance rural and environmental interests against those of agriculture when framing national agricultural policy.

In 1986 the Government undertook a review of possible alternative land uses and measures to encourage alternative employment in the countryside. This was known as the ALURE exercise (Alternative Land Use and Rural Economy). It gave rise to the Farming and Rural Enterprise package, which was launched in 1987. The Government recognised that, with the European Community producing surpluses of many of the main agricultural commodities, a new balance of policies had to be struck with less support for expanding production, more attention to the demands of the market, more response to the claims of the environment, more encouragement for alternative uses of land, and more diversity on farms and in the rural economy. That marked the beginning of a trend in Government policy which has been continuing ever since.

A number of important policy initiatives in the agricultural sphere were launched. Some of these have specific environmental objectives while others act more indirectly; some are quite novel and are being tested. These initiatives are in various stages of advancement but all are of importance from the environmental standpoint as the following brief summaries show.

Farm Woodland Scheme (FWS)

This three-year experimental scheme breaks new ground in several ways by encouraging small, mainly broadleaved, woodlands to enhance landscape and wildlife habitats on productive agricultural land. It has been quite well received by both farmers and environmentalists alike. So far over 2000 farmers have applied to plant over 14 000 hectares of woodland; 77% of the area is expected to be planted with broadleaved trees and oak will have by far

the largest individual share with 21% of the trees planted. Although short of the original expectation in terms of overall area, the scheme represents a substantial achievement as woodland planting is a new departure for many farmers and represents a long-term commitment. We are now nearly at the end of the scheme's three-year experimental period and are completing a comprehensive review to see what lessons we can learn for the future.

Environmentally Sensitive Areas (ESAs)
It is important to remember the primary objective of ESAs – particularly for those who suggest the whole of the United Kingdom should be an ESA. The primary objective is to help conserve areas of high landscape or wildlife value which are vulnerable to changes in farming procedures. The first schemes, which are voluntary, were launched in March 1987 with further additions in 1988. There are currently 19 ESAs in the UK ranging from West Penwith in Cornwall to Loch Lomond in Scotland. In each case there is a list of approved practices which participating farmers are obliged to follow under management agreements with the Ministry. In the first 3 years some 5200 farmers have opted to put more than 273 000 hectares of land into the schemes, at an annual cost to the Exchequer of some £10 million.

The Pilot Nitrate Scheme
The objective of this scheme is to assess the effectiveness and efficiency of a range of agricultural measures for reducing nitrate leaching. In turn this will help the UK to meet the 50 mg/l nitrate limit in drinking water which results from the 1980 EC Drinking Water Directive. The scheme is voluntary and covers 9 Nitrate Advisory Areas (20 000 ha) and 10 Nitrate Sensitive Areas (15 000 ha). Within the Advisory Areas farmers are offered free advice on how to adjust practices to reduce leaching at little or no cost – possibly some benefit – to themselves. In the Sensitive Areas, on the other hand, farmers are invited, for a payment, to enter into a 5-year agreement to effect substantial changes in their farming systems to reduce nitrate leaching. The per hectare payments vary depending on farming circumstances and whether the land is entered into the Basic (less restrictive) version of the scheme or the Premium Scheme which involves considerable changes in production systems.

Farm Diversification Grant Scheme (FDGS) and Farm and Conservation Grant Scheme (F&CGS)
The FDGS was launched in January 1988 and is open to full-time farmers throughout the UK. It aims to assist farmers to extend their on-farm sources of income by diversifying into non-agricultural farm-based activities. 25% grants are available for capital investments of between £750 and £35 000, with a special supplement for young farmers who meet certain criteria. The scheme also aims to encourage the proper planning and marketing of such

investments and offers grants for feasibility studies and professional marketing. Since the beginning of the scheme over 1800 applications have been approved in England and about £4.8 million has been paid out. Participants in the scheme are required to ensure that diversification will not cause pollution or damage to the countryside.

The F&CGS was introduced in February 1989 and concentrates on environmental investments with particular emphasis on the combating of farm pollution. Grant is payable at various rates (50% for waste facilities) on expenditure of between £750 and £74 000 in any 6-year period. In 1990 £15 million was paid on grants in England towards farm waste investments which accounted for more than 80% of total scheme expenditure.

Set-aside and extensification

Set-aside was introduced as part of a package of measures designed to curb over-production and contain CAP costs. It acts as a complement to stabilisers and contibutes to reducing arable output in two ways: by taking land out of production and by providing an alternative source of income for producers hardest hit by price restraint. Farmers receive a payment from the Ministry (of up to £220) for each hectare of land set aside. This land may only be used for woodland, permitted non-agricultural uses, or left fallow. Set-aside agreements are for five years although farmers can withdraw all or part, provided that at least 20% remains, of their committed land after three years. The annual uptake in the UK has ranged between 31 000 and 52 000 hectares in the first three years of the scheme and by 1992/93 the total area set aside is expected to climb to over 200 000 hectares. In the first year the scheme cost about £9 million and the annual cost is expected to peak at some £40 million by 1993/94. A socio-economic evaluation of the scheme has just been completed and an environmental evaluation is underway.

The Council of Ministers has just agreed a one-year Set-aside scheme as part of the 1991 price fixing. The Commission has stated that this one-year scheme is an interim measure leading to new arrangements to be put forward as part of the reform of the CAP. To qualify, participants will have to set aside at least 15% of their 1991 arable area in 1991/92. The scheme requires the maintenance of a green cover or a financial penalty. (Member States must apply other environmental rules appropriate to their individual circumstances). The aspect of major importance to environmental policy is the acceptance by the Council of Ministers of the principle that environmental requirements should be an integral part of agricultural policy – not an optional extra.

The purpose of the Pilot Extensification Schemes – one for beef and one for sheep – is to assess how the EC extensification schemes can best be implemented on a cost-effective basis with proper control but without undue cost and complexity in administering and monitoring the schemes. The schemes aim to secure at least 20% reduction of beef sales or ewe numbers

from participating farms without an attendant increase in the output of other surplus products. For the first time the EC has included integrated environmental requirements in the Scheme. An environmental evaluation is being put in hand. Detailed information is being obtained from surveys of participants and non-participants to assist in the design of the definitive schemes and enable their impacts to be gauged. The pilots are voluntary and compensate farmers for loss of earnings due to the reductions they make under the scheme in their beef herds or sheep flocks. Farmers may join either or both schemes and are expected to remain in the scheme(s) for five years. Between July and December 1990, eighty five holdings signed up for the schemes. The cost to the Exchequer is expected to be about £½ million annually.

Hill Livestock Compensatory Allowances (HLCAs)

We are also committed to reviewing existing policies. HLCAs, for example, are a long-standing mechanism for promoting the continuation of a livestock farming presence in the hills and uplands. To the extent that they have helped prevent rural depopulation and countryside dereliction by providing essential income support they have already made a positive environmental contribution. But the environmental downside is also well known with damage to sensitive habitats in some areas, notably heather moorland, from overstocking stimulated by HLCAs. So we are reviewing this existing policy to see how its environmental benefits can be made more specific, and hope to consult widely on this in due course.

THE NEW APPROACH

A major milestone was reached in September 1990 with the publication of *This common inheritance*. The White Paper provides us with clear objectives, namely:

- to integrate environmental and economic activity in rural areas;
- to conserve and improve the landscape and encourage opportunities for recreation;
- to give extra protection to areas of special value;
- to conserve the diversity of Britain's wildlife, particularly by protecting habitats; and
- to provide scientific monitoring and research to support these aims.

These developments embody an approach to policy making which requires, as a matter of course, the assessment of all new agricultural policies. All agricultural policies have clearly specified and agreed objectives but we are now aiming to try to measure – through continuous assessment – the extent to which policies actually deliver the benefits they are designed to provide and whether they do so cost-effectively. In some cases, as we have seen, policies are piloted before they are introduced at national level; in all cases they are being tracked to see how effective they are proving to be.

The assessment process entails a number of steps. First *an appraisal* is made which seeks to establish the likely impact of the policy in terms of its objectives, and of its expected benefits and costs to the country as a whole, to the Exchequer, to UK agriculture and to participating farmers. Where appropriate the implications for the EC are also considered. In the case of the more novel, path-breaking initiatives pilot schemes are operated to provide a firmer basis for consultation and appraisal and the experience on which to build an effective and efficient scheme.

Once in place the policy is *monitored* and, at an appropriate time, *reviewed.* The purpose of the review is to decide whether to continue with the scheme and if any changes should be introduced in the light of experience already gained. Consultation with all parties affected by the policy and with the public is an integral part of the appraisal and review. The Ministry has close contacts with a wide range of environmental bodies which provide not only ideas but also on occasion pilot their proposals so that we can all see the results. Reviews have not yet been completed for any of the policies discussed here but the process entails a reconsideration and refinement, if necessary, of the objectives, a reassessment of the costs and benefits, a recalculation of the value-for-money and Exchequer implications of the scheme and, where possible, recommendations for improvement in administrative arrangements. In due course *evaluations* of the policies will be made.

Valuing environmental impacts

A major difficulty with policy assessment is the identification and measurement of environmental effects. The problem arises with all policies that have important environmental impacts but it looms particularly large for agriculture most of whose policies can have widespread and considerable environmental consequences. An interdepartmental Group on Environmental Costs and Benefits is currently developing guidance for use by government departments on the procedures and methods for handling the environmental elements of policy appraisals. MAFF is contributing to this work which is still in the relatively early stages. It is already clear, however, that in future the emphasis will be on the measurement and, where possible, the valuation of environmental effects rather than simply on identification, listing and generalised discussion.

The problems are daunting since many environmental impacts in the agricultural sphere are extremely difficult (sometimes impossible) to measure let alone value. Examples are measuring and valuing landscape change in, say, an ESA or estimating the impacts of Hill Livestock Compensatory Allowances in the Less Favoured Areas and then valuing the change in the ecosystem induced by the policy. Much time and effort will be expended over the next six months and beyond on:

(i) identifying the nature of the likely significant environmental impacts of agricultural policies;

(ii) deciding how best to measure the physical changes involved;
(iii) reviewing the valuation techniques available and deciding which ones, if any, are appropriate for particular types of environmental impact.

Scientific research

Another example of our wish to see our policies soundly based is our approach to scientific research. MAFF's policies are very much scientifically based and a significant part of our research has an important environmental dimension. We have just published our booklet on our Environmental R & D programme. As noted in the foreword, to succeed in meeting our responsibilities for the countryside and marine environments, our policies need to be supported by the best possible understanding of the interaction of man and the environment both in the immediate and the longer term. To secure that understanding MAFF will be spending about £50 million in 1991/92 on environmental R & D. The R & D strategy is designed to provide a managed programme to yield essential information for the formulation and evaluation fo policies, as well as in their practical application. The Ministry takes great care to co-ordinate its funding with that of the other main national funding agencies and to ensure that its funding is used to the maximum benefit in maintaining and sustaining an adequate and vital research base. In this the Ministry is advised by the Priorities Board for Agriculture and Food Research, one of whose Advisory Groups covers the environment sector and is made up of representatives of all the major national funding agencies.

The programme that results from the considerations of the Ministry and its advisers is broad in scope and comprehensive in its coverage. Programmes address the protection of the rural environment, farm woodlands, set-aside, the protection of water supplies and rivers, the protection of soil and the land, protection of the air, pests and pesticides, genetic conservation and modification, floods and coastal defence, and the newly developing concerns about the changing climate.

Socio-economic research

Apart from its extensive methodological work, MAFF has already commissioned, at an annual cost of some £¼ million, socio-economic studies of new policies to measure the estimated impacts on farmers' income, changes in levels of agricultural output, net Exchequer costs and benefits, employment effects etc. Plans are also being drawn up as part of the work of the Group on Environmental Costs and Benefits to extend environmental assessment to all agricultural policies, whether established, new or proposed. Additionally the Ministry has commissioned assessments of the recreational and amenity benefits of coastal protection and sea defence and is active in sponsoring seminars and conferences, such as the present one, aimed at

improving the application of economic techniques to environmental assessment.

A major methodological research initiative in the socio-economic field aims to develop an econometric model to measure and spatially locate the effects of changes in agricultural and environmental policies on agricultural land use. This work has been commissioned, jointly by MAFF and DOE, from the Centre for Agricultural Strategy (CAS) at Reading University. The project is still in its formative stage and much remains to be done before an operational model is available. If the research proves successful, it should be possible to trace the effects of agricultural policy changes and initiatives, including those relating to the CAP, on the pattern of agricultural land use in England and Wales. Looking to the future it might be possible to extend the model to estimate the implications for agricultural production, inputs, costs and returns of the introduction of environmental policies such as the designation of ESAs. The model could prove to be a useful policy simulation tool and a valuable adjunct to existing means of policy assessment. A possible further development could be to extend the scope of the model to determine the significant environmental changes (eg in wildlife habitats and species) associated with agricultural land-use change.

THE FUTURE

Any realistic outlook for agricultural policy must recognise the existence of a number of major uncertainties whose outcomes may lead to significant alteration of any plans drawn up now. These include the extent to which the other EC Member States will share our priorities, the degree to which the public are prepared to accept the cost of supporting environmental objectives and the effects of large natural upheavals, such as climate change, which could transform the regional and national patterns of world agricultural production, change the comparative economics of agriculture throughout the world and hence the pattern of world trade in agricultural commodities. In the political sphere major unforeseen events, such as the break-up and economic collapse of the Soviet bloc, can induce huge upheavals requiring rapid policy responses, for example the possible need to alleviate food shortages in the USSR and Eastern Europe. Research, too, is likely to highlight the need to handle environmental matters ever more sensitively in order to promote the survival of species and protect human life itself.

A first priority is to recognise that our agricultural potential is an irreplaceable asset and we will continue to need efficient farmers with the skills and technology necessary to meet future food requirements while providing for a flexible system of land and natural resource management so that unforeseen contingencies may be dealt with effectively as they arise. With an adequate response capability in place we should then aim at

protecting and enhancing particular landscapes and habitats accepted as special. This may be partly achieved by further reducing incentives to intensive farming. More generally we will need to move towards fuller integration of environmental requirements into mainstream agricultural policies; eg by means of cross-compliance measures where possible. Obviously, there is considerable scope for manoeuvre and imagination in the development of policies aimed at these broad objectives. It is not possible to be specific at this stage about the precise nature of likely new initiatives, but some broad directions are reasonably clear.

First, lessons will be learned from the new policies which have already been launched or piloted and from the wealth of information gained from the assessments. This will be done through the planned policy reviews described previously.

Second, thought needs to be given to the link between 'spare' land and environmental objectives. Essentially there would seem to be two possibilities. The first concerns targeting. This would mean, for example, targeting reductions in agricultural production on aquifer protection areas, matching cropping patterns to the quality of the land, enhancing the environment in, for example, heathland, downland etc. Experience with ESAs and Set-aside and on what we learn from extensification will be very relevant.

A further possibility, promoted by some environmentalists, is a more direct approach. It would be possible, for example, to define types of area such as:

(i) Sanctuaries or reserve areas: here the objectives would be primarily wildlife and landscape protection and enhancement, with access for urban dwellers to enjoy them; food production would be a by-product.

(ii) Landscape areas where we are being encouraged to regard maintenance and enhancement of the landscape as the primary objectives; food and other rural industries would be secondary objectives rather than by-products; and we would achieve these objectives by subsidising traditional farming.

(iii) The third area would be the best agricultural land where the production of food would be the primary objective; in this case landscape, conservation of wildlife and access would be important secondary objectives.

Whatever approach or combination of approaches we adopt we shall have to take account of the fact that virtually all of the land we will be dealing with is privately owned. This means that persuasion and economic inducement rather than regulation and dictat will normally be the means by which our aims will be pursued.

But we should go further: landowners should be encouraged to consider how their environmental assets might be shared with the public – giving

them new opportunities for recreation and, where possible, providing farmers with additional sources of income. To this end ADAS have put together a campaign to show farmers, by advice and example, the opportunities that are available to market their environment assets. The examples will be by way of farm events which will show farmers what their colleagues have already achieved.

CONCLUSION

Agricultural policy is in a rapidly developing phase with the negotiations in GATT and further proposals on the reform of the CAP awaited. An important aim is to integrate environmental objectives more fully and effectively into agricultural policy. However the task is a difficult one and despite the progress already made, much remains to be learned. The development of integrated, 'green' policies requires above all, flexibility of approach. It would be wrong to expect to substitute expenditure on production support measures with equivalent expenditure on environmental policies. We must maintain the capability to react speedily, efficiently and effectively to unforeseen natural and socio-political events which affect both environmental and agricultural conditions and hence the appropriate type of policy response. The task is a vital one and needs progress to be made, among other things, on policy assessment methodology; the agenda for action is one that extends to the end of the century and beyond.

Nevertheless the general direction in which we should move is clear: the need for an ever closer combination of agricultural and environmental objectives through more integrated policies. The exact form these will take is not yet clear. The results of research and the lessons learned from policy assessments will have to be taken into account; the wealth of academic and professional advice will need to be examined and carefully considered.

However a number of points are beyond controversy. We must maintain our agricultural potential because it is an irreplaceable asset. We must adopt a system of farming which is both efficient and environmentally sensitive. We must continue to seek and benefit from technological improvements in farming. Since most of the countryside is privately owned our approach to policy in the main will be one of voluntary effort in partnership with the owners and managers of the land. Concern for value-for-money will encourage the approach which seeks to target the protection and enhancement of particular areas under threat and it is to be expected that any payment to farmers for positive environmental management measures will be related to their costs.

REFERENCE

HM Government (1990) *This common inheritance. Britain's environmental strategy.* Presented to Parliament by the Secretary of State for Environment *et al.* Cm 1200. London: HMSO.