



Research Paper 38/01

September 2001

SUSTAINABLE AGRICULTURE

This paper broadly outlines some of the main issues surrounding the concept of 'sustainable agriculture'. It places the emphasis given to the environmental impact of agricultural policy in context to other elements of 'sustainable agriculture'. It refers to the integration of environmental concerns into agricultural policy at a European level and emphasises the importance of the ongoing reform of the CAP to achieve sustainability. It briefly notes the proposed UK government position on incorporating sustainability into agricultural policy.

SUMMARY OF KEY POINTS

The Common Agriculture Policy has undoubtedly led to agricultural practices that have shaped the physical nature of the rural environment. The priority of the CAP has been to increase production to achieve self-sufficiency in basic products for food production. However this has led to negative impacts, for example the impact on water quality, reduction in biodiversity, pesticide use, and the removal of hedgerows. Coupled with the recent animal health scares such as BSE and Foot and Mouth the overall perception is of an industry that needs to change its priorities.

This is being acknowledged, to some degree, at a European and national level with environmental concerns being increasingly integrated into agricultural policy. This apparent change in direction has also been encouraged by public concern about the environmental impact of agriculture on the countryside. In addition the changes should perhaps not be considered as the environment assuming priority because of concern among policy-makers about the environment *per se*. Rather, it is recognised that the financing of the CAP will not be sustainable in light of expansion of the European Union. Therefore, incorporating environmental concerns into agricultural policy is perceived in some corners as an opportunity for the EC to restructure agriculture and thereby reduce the cost of the CAP while at the same time satisfying the environmental lobby. Additionally it is believed that some policy-makers may view the aims of environmental improvements as a strong argument to reduce agricultural outputs.

However it must be recognised that sustainable agriculture is not solely about farming in a more 'green' manner. At a national level agriculture is increasingly being regarded as only one part of the rural economy, therefore while environmental quality issues are important other issues such as economic efficiency and social responsibility must also be considered.

CONTENTS

Contents.....	1
1 Introduction	1
2. What is meant by 'sustainable agriculture'?.....	2
3 Policy Reform - the integration of environmental concerns into agricultural policy	3
4 UK action and policy on sustainability agriculture.....	6
5 Conclusion	8
6 References.....	11

1 INTRODUCTION

Agriculture is responsible for a number of adverse environmental impacts including:

- Pollution of freshwaters both from diffuse and point sources contributing to the eutrophication¹ of freshwaters through the application of fertilisers and manures;
- The removal of hedgerows thereby decreasing the habitat availability for wildlife and consequently adversely affecting biodiversity;
- Overgrazing which can lead to soil erosion;
- Reclamation of wetlands etc.

Much of this impact has been attributed to the direction of agricultural policy formulated at a European level and implemented nationally in Member States. Brouwer and Lowe¹ identified three broad areas of concern in relation to the effect of the Common Agricultural Policy (CAP) on the environment:

1. Intensification of farming supported by high product prices under the CAP have encouraged the use of inputs e.g. use of artificial fertilisers leading to surpluses of manure; pesticides and herbicide use has increased giving rise to greater potential for pollution; use of feed supplies has encouraged overstocking.
2. Farm restructuring has been a long-term objective of the CAP and aimed to modernise farms making them more efficient. With financial aid to help achieve this, change in rural landscapes occurred through drainage, reclamation of land, loss of hedgerows etc.
3. Rural populations have also been maintained through structural policies and price supports. These have been focussed on Less Favoured Areas which cover over 50% of the agricultural area of the EU. Much of this land is of nature conservation or landscape value.

The European Community's Fifth Environmental Action Plan also concluded that:

*"farming practices in many regions of the Community have led to over-exploitation and degradation of the natural resources on which agriculture itself ultimately depends: soil, water and air"*².

Others³ would argue that the habitats and landscapes throughout Europe that are cherished most have originated precisely because of agricultural practices e.g. the 'patchwork quilt' of fields in Ireland. While the concept of sustainability in relation to farming might only bring to mind environmental-related issues 'sustainable agriculture' is a far more complex concept. It also relates not only to the environment but also to trade liberalisation, food security, price support mechanisms and social welfare issues among others. While this paper concentrates on environmental concerns it aims to place them in context to these other issues, particularly in relation

¹ Eutrophication is the term used to describe the process of phosphorus enrichment. It can be defined as the over-enrichment of lakes and rivers with nutrients, usually phosphorus, leading to excessive growth of algae and other aquatic plants.

to the integration of environmental concerns into agricultural policy at a European level and with reference to ongoing reform of the CAP.

2. WHAT IS MEANT BY ‘SUSTAINABLE AGRICULTURE’?

The classic definition of sustainability gleaned from the Brundtland report⁴ rests on the principle that we must meet the needs of the present without compromising the ability of future generations to meet their own needs. In relation to environmental considerations the basic issue is whether agricultural activities can produce food efficiently and at low cost (and therefore benefit consumers) and profitably (benefiting farmers) without degrading natural resources. Advances in productivity, linked to pesticide use, mechanisation, livestock intensification etc., have invariably been associated with environmental damage as noted above. In Northern Ireland for example the use of animal wastes and artificial fertilisers have contributed to the eutrophication of many rivers and lakes while fish kills are regularly reported due to release of farm effluent into freshwaters⁵. However, the concept of sustainable agriculture is a complex one that incorporates a number of other, arguably, equally important factors.

As detailed in a report⁶ by the Committee for Agriculture of the Food and Agriculture Organisation of the United Nations (FAO) changes in perception in relation to the interpretation of Sustainable Agriculture and Rural Development (SARD) are emerging:

“The first is that the concept must extend to social, institutional and economic sustainability and not exclusively environmental sustainability - the conservation and rational utilisation of natural resources. Those now working on SARD understand that sustainability means that management practices must be profitable and socially and culturally suitable, and must satisfy local requirements such as property rights over natural resources. The second is a new focus on development as a process which must allow for calculated trade-offs between reductions in the stock of natural capital (forests, unexploited freshwater, etc.) and the generation of resources for investment in human and social capital (healthier and better educated people, technical knowledge and infrastructure). These shifts in perception increase the challenge of implementing SARD, but also open up opportunities for doing so”.

Sustainable agriculture therefore *must* address issues of economic efficiency, social responsibility and environmental quality⁷. Any alternative that simply focuses on ameliorating environmental impacts without addressing the social problems that farmers would face or the economic forces that perpetuate the situation in agriculture is unlikely to succeed⁸. Economic efficiency means meeting an increase in demand for food at the lowest cost. Parallel with this is the demand placed on the farmer to improve the environmental performance of his operation, i.e. reduce the adverse impact on the environment. Finally there is the requirement to achieve all of this in a socially responsible manner by, for example, increasing the farmer’s education and skills, incorporating animal welfare concerns and ensuring the land can provide an appropriate level of income⁹. Legg¹⁰ points out that while the basic premise of sustainable agriculture, outlined above, is easily understood there are important characteristics of sustainable *development* applicable to agriculture that should be noted:

- *“First, it is a dynamic process, which focuses on the ability of the economy to meet demand in cost-efficient ways through developing, combining and substituting resources in the production process — provided that there are appropriate signals to producers and consumers on which they can make their decisions.*
- *Second, it is a global concept, which recognises that allowing flows of resources between sectors and economies through international trade can maximise production while reducing pressure on fragile resources.*
- *Third, it is a multidimensional phenomenon, encompassing economic, environmental, and social dimensions. The concept of sustainable development goes beyond the economic growth that is conventionally measured in Gross Domestic Product, and takes into account the state of resources and environmental performance of the economy, as well as current and future social and distributional aspects. Thus it stresses the need for both inter- and intra-generational equity in a long-term perspective”.*

•
The MAFF (now DEFRA) definition¹¹ of sustainable agriculture includes:

- *“Ensuring the continuing availability to the consumer of adequate supplies of wholesome, varied and reasonably-priced food, produced in accordance with generally accepted environmental and social standards;*
- *Maintaining a competitive and flexible industry which contributes to an economically viable rural society;*
- *Ensuring effective protection of the environment and prudent use of natural resources;*
- *Conserving and enhancing the landscape, wildlife, cultural and archaeological value of agricultural land; and*
- *Respecting a high level of animal welfare”.*

Environmental concerns therefore, while important and often centrally placed in any discussion of agricultural reform are only one element of sustainable agriculture.

3 POLICY REFORM - THE INTEGRATION OF ENVIRONMENTAL CONCERNS INTO AGRICULTURAL POLICY

Agricultural policy is dominated by a EU policy – the Common Agricultural Policy (CAP). The Treaty of Rome (1957), in the aftermath of the Second World War, laid down the foundations for the CAP which aimed to modernise European farming and thereby increase production to achieve European self-sufficiency in food production. This aim was supported by price supports and subsidies that also aimed to increase farm incomes relative to other areas of the economy¹² and took place with little regard for the environment¹³. However, with growing awareness of environmental

issues throughout Europe policy-makers have had to consider reform of the CAP with a view to integrating environmental considerations into agricultural policy. The relationship between agricultural production and environmental effects *have* resulted in policy change however it would be wrong to see this change as being brought about *solely* by recognition of the environmental impact of agriculture. Rather, environmental arguments coupled with other powerful arguments, most recently the cost of implementing the CAP in an expanded Union, have instigated change. As Lowe and Baldock (2000)¹⁴ stated:

“Thus, some agricultural policy-makers have responded to environmental concerns, not necessarily through any deep-seated convictions, but because of a perceived coincidence between the aims of environmental improvement and the need to reduce agricultural output, thereby contributing to the alleviation of surplus and budgetary problems”.

One of the main problems with integration of environment and agriculture policies is the fact that in the EU and in Member States decision-making is sectoralised. The Agriculture policy network in the EU is well-established and diverse consisting of a range of committees and policy development structures, farming interests and the Agricultural Directorate (DG VI) itself, and has proved difficult for non-agricultural interests to access¹⁵. The Environmental Directorate (DGXI) is much more recent and in comparison to the Agricultural Directorate has been a much more open policy field. Additionally different policy instruments tend to be used in each sector¹⁵. Regulations are the main policy instrument used in agriculture and leave the Member States with little room to make changes perhaps more readily applicable to their national situation. Directives are the main form of legislation applied in Europe to environmental policy which facilitates greater discretion at a national level. The differences established through the evolution of these two sectors therefore presents obstacles to integration of policy. The Single European Act, which came into force in 1987, constituted a new legal basis for Community policy on the environment, and had the following objectives:

- To preserve, protect and improve the quality of the environment
- To contribute towards protecting human health
- To ensure a prudent and rational utilisation of natural resources

The Act went on to state that:

“environmental protection requirements shall be a component of the Community's other policies”

The Amsterdam Treaty² consolidated environmental issues within European decision-making by placing emphasis on sustainable development through the consideration of environmental aspects in all sectoral policies. Recently the ‘Cardiff Process’ *required* the Council of Ministers of the European Union to develop strategies to integrate environmental concerns into their activities. Among the first wave called on to develop strategies is Agriculture. This is largely in response to the

² Entered into force on May 1st 1997 after being ratified by the fifteen member states of the European Union under their respective constitutional procedures

Amsterdam Treaty 1997 but is also recognition of the deficiencies of environmental policies *per se* in tackling environmental degradation caused by other sectors¹⁶.

The CAP was subject to reform in 1992 when for the first time environmental protection was acknowledged as an *objective* of the CAP. The environmental benefits of these reforms could be viewed as the by-product of a shift in the balance of the CAP from price supports to direct payments and, with hindsight, relatively modest¹⁷. It is now recognised that the reforms of 1992 have not provided the environmental changes anticipated possibly because:

- (i) they were insufficiently focussed on environmental improvement; and
- (ii) because developments in markets have altered the course of the reforms¹⁸. This suggests that simply changing policy, e.g. removing support payments, will lead to less intensive farming by fewer farmers and therefore provide environmental benefits is too simplistic an approach. While environmental considerations continue to be peripheral to CAP reform it is unrealistic to expect a substantially reduced environmental impact, as noted by Winter¹⁸.

“Expecting environmental gains to emerge from policies not explicitly designed with such outcomes in mind is unrealistic, even without the added complication of policy distortion brought about by interaction with non-policy influences”.

The Rural Development Regulation¹⁹ evolved out the 1992 reforms and brought together nine separate measures including agri-environment measures. The Agri-environment Regulation is commonly referred to as the ‘second pillar’ of the CAP. However while emphasis is sometimes placed upon these measures as though they were the answer to the environmental impact caused by agricultural policy they comprise only a minor element of the CAP. As Brouwer and Lowe¹ stated:

“Not only do the main commodity regimes have much greater consequences for the environment, but there is also evidence that commodity supports actively discourages take-up of agri-environment measures. Thus the beneficial effects of the Agri-environment Regulation may be swamped by the environmental impact of the rest of the CAP”.

Clark et al. (1997) also point out that many of the measures that are considered ‘environmental’ actually have very limited environmental content²⁰. Winter et al. (1997)²¹, for example, have cited extensification as a term used to support such policies but which has actually provided little environmental benefit. Agenda 2000 continued the reform of the CAP but its ultimate aim was to prepare for accession of new members within a strict financial framework. There was concern that extending an unreformed CAP to several new states with large agricultural sectors would prove to be prohibitively expensive for the EU budget²². Those within the agriculture sector now realise that agricultural policy and environmental policy are more closely integrated than ever before and that operations on the farm are more than ever expected to follow environmental guidelines. The agreement of agricultural reform in Agenda 2000 marked a change in the CAP putting in place environmental underpinning to agricultural support. These include²³:

(i) **Farmers expected to conserve basic environmental standards without compensation**

Member States are expected to take appropriate environmental measures in view of the agricultural land used or the production method.

(ii) **Additional environmental services to be remunerated through reinforced agri-environmental measures**

Rural development has been established as the 'second pillar' of the CAP and for which agri-environment measures are a compulsory element e.g. support for forestry, countryside management, organic farming etc.

(iii) **The new Structural Funds regulation reflects the political priority of integration**

- Environmental protection and improvement included among the objectives of the structural funds.
- Existing instruments are strengthened: partnership, environmental assessment, the principle of conformity to community law and policies, the polluter pays principle and the procedure to be applied to large projects.
- New instruments to ensure the effective integration of the environment in agricultural programmes.

(iv) **The ex-ante environmental assessment of future plans and programmes**

Article 40 of the regulation on structural funds expects that an ex-ante assessment of the regions' environmental situation be made in order to give a quantified description of the current situation and an estimation of the potential impact of the strategy and interventions on the environment.

(v) **The promotion of the "environmental authorities" role in the partnership**

The purpose is to co-ordinate the presence of environmental authorities in the Structural Funds' decision-making process as part of the new agreement on the sharing of responsibilities between Member States and the Commission.

4 UK ACTION AND POLICY ON SUSTAINABILITY AGRICULTURE

At a UK level the importance of sustainability has taken a new turn with the preparation of a sustainable development strategy by the Department for Environment, Food and Rural Affairs which is expected to be published in Autumn 2001. The very establishment of this department appears to indicate the Government's change in direction in relation to agriculture with emphasis on environment and rural affairs. This is reflected in a speech²⁴ by DEFRA Secretary Margaret Beckett to staff in which she outlined the aims of the strategy i.e.:

-“To identify those areas which pose the greatest challenge to sustainable development;

- To identify where the greatest opportunities exist for contributing to sustainability;

- To set out how all DEFRA policies will be developed with a view to achieving economic, social and environmental objectives at the same time”.

She further suggested in a speech to a RSPB conference on July 17th that she would be pursuing reform of the Common Agricultural Policy branding the Policy’s market price supports and production controls as “...*outdated mechanisms that should be phased out*”²⁵. There has already been some significant movement in this direction with 65% of subsidies now going to farmers in the form of subsidies rather than market-distorting price supports²⁶. The German Agriculture Minister, Renate Kunast, also supports movement in this direction having stated her desire to see funds redirected towards the support of organic farming methods²⁷.

In a recent House of Commons Agriculture Committee report²⁸ the government’s position on the future direction of agriculture was led out:

“The Government’s view is that trade liberalisation is “firmly linked to further reform of the CAP” with the aim of reducing the cost of the CAP to consumers and taxpayers, encouraging the development of viable and sustainable farming industry...”

This follows on from decisions by the UK government to phase in ‘modulation’ which will reduce compensation payments to farmers over time. Member States are allowed to modulate up to 20% of their agricultural spend. The amount to be modulated (2.5% in 2001 increasing to 4.5% by 2005) will be matched by the government and the bulk of this will be spent on agri-environment measures²⁹. With the EU coming under increasing pressure to reduce subsidies in order that prices can be reduced to *actual* world price levels many anticipate that support for production will be phased out over the long term. The importance of agri-environmental considerations has paralleled the growing pressure to reform agricultural trade policy particularly since the Uruguay Round Agreement on Agriculture.

From an international standpoint therefore debates on these two issues have become interlinked i.e. what will be the effect on the competitiveness of Member States due to agri-environment regulations and to what extent does domestic policy affect international trade? A study by the OECD³⁰ has shown that farmers will take decisions that improve the environment if they are provided the right incentives, made aware of the environmental costs and benefits of their activities, and motivated and have enough resources. However, resistance to change is evident within the agriculture sector principally due to capital investment which has served to intensify the socio-economic and environmental dimensions of the crisis³¹ by making farmers dependent on the suppliers of inputs i.e. pesticides, artificial fertilisers etc. Moves to an alternative mode of agricultural operation that relied less heavily on these inputs would have obvious implications for profits of these suppliers. It might be expected that the potential profit loss could make the entire agrarian system very resistant to change³².

The National Farmers’ Union (NFU) England and Wales in its strategy for UK agriculture³³ states that *“Without profit there can be no sustainable farming”*. While

this may be the case it is necessary to point out that it is likely that the government's strategy will focus on sustainability of the overall rural economy not just farming and that one possible outcome, though not inevitable, is the rationalisation of the industry similar to that proposed in the fisheries sector. This would not be unsurprising given that the Common Fisheries Policy (CFP) grew out of the CAP and is exhibiting many of the same problems i.e. price supports, environmental issues, over-capacity etc. The NFU's strategy contains what may be perceived as a wish list related to how it would like to see agriculture developing. It addresses environmental concerns in two of the ten sections:

1. Farmers and growers must seek out and meet the needs of their customers

"For land management systems which protect, enhance and promote the character, diversity and environmental values of the landscape."

2. An industry that maintains and improves the quality of our air, water, soil and countryside

"Farmers know that the countryside is most effectively managed by farmers. We must make certain that society is convinced that this is the case".

Many would agree with the first point but the second is debatable. There is little reference to the *integration* of environmental concerns into agricultural policy or wider policy areas. There are simply proposals to enhance agri-environmental and environmental schemes as a means of effectively managing the countryside. There is also a telling proposal in the strategy titled 'Managing the Countryside' i.e. "Finding new ways of remunerating farmers for services *where no market exists*" (my italics) to be achieved by exploring "*new ways of paying farmers for public goods*". This, potentially, could be translated by the taxpayer as being asked to pay for services which it might ordinarily expect the farmer to carry out as a matter of course. However this type of approach is supported by The Countryside Agency in a published strategy which proposes that farmers should be subsidised to deliver a range of benefits other than food and fibre³⁴. These would include beneficial practices in conservation, biodiversity, landscape character and recreation.

5 CONCLUSION

It appears likely at both a European and national level that environmental policy will continue to be incorporated into key sectoral policies and most overtly into agricultural policy. To some this may translate as increased funding for and expansion of domestic agri-environment schemes. However, it would be simplistic to view the result of the development and integration of different sectoral policies solely in terms of these schemes. While agricultural issues debated at the World Trade Organisation in relation to trade liberalisation might seem distant and unrelated to the average sheep farmer in Northern Ireland it is decisions taken at this level that could ultimately determine *how* local farmers will be farming in years to come and indeed *if* it will be possible for them to do so profitably.

The continuing problem of BSE and the recent outbreak of foot and mouth have afforded the government the opportunity to take steps to address the future of the

agriculture sector perhaps more radically than in previous years. This is in the context of growing public support for reform of a sector which is perceived as being overly subsidised in an era where free market economics prevails and which rightly or wrongly is perceived as having brought many of the recent problems on itself. The government has appointed Lord Haskins as the "Rural Recovery Co-ordinator" to spearhead a recovery programme for areas worst hit by the foot and mouth crisis. However he has raised concerns in some farming unions over comments made about the future prospects of farming including small farms which he reputedly suggested were "closing in on extinction"³⁵. In another interview³⁶ he said farmers had been "mollycoddled" for too long and called for a massive shake-up of farming subsidies. To some this confirms suspicions of the government's desire to see small farmers removed from the industry with agriculture consolidated in large farms which can produce food efficiently i.e. with reduced subsidies, and have the resources to pay necessary attention to employing more environmentally-friendly farming methods.

In addition to this inquiry Sir Don Curry has been appointed Chairman of the Policy Commission into Food and Farming which was convened to look at the future of farming in England in light of the Foot and Mouth outbreak. The Terms of Reference are:

"Will advise the government on the creation of a sustainable, diverse farming and food sector which contributes to a thriving and sustainable rural economy, advances environmental, economic, health and animal welfare goals".

Sir Don has stated³⁷ that:

"We need to map out a plan for sustainable food and farming in this country. By that I mean sustainable in terms of the environment. We need a policy which does not harm our environment. We also need sustainability for our food chain so that businesses remain viable, otherwise we will not have a secure food supply".

The two references to 'sustainable' in the ToR reflect the importance of this concept in the government's future plans not just for agriculture but also the rural economy. It is also evident that the government is emphasising that agriculture is only *one part* of the rural economy and that protection of the environment is one of the main objectives of a future agriculture strategy for England. Research throughout Europe³⁸ has shown that farm households now have multiple income sources and that over half were no longer dependent on agriculture as their main source of income. Lowe and Ward (1998)³⁹ citing this and other research state that:

"With the prosperity of farm families increasingly dependent on the rural economy, and with the rural economy less and less dependent on the performance of an agricultural sector integrated into global market, then it follows that the focus of intervention to promote rural development and employment should be the rural and regional economy and not the agricultural sector".

This type of reform, positioning agricultural policy in relation to wider rural and regional policies, appears to be the course set by the government, but as Lowe and Ward go on to say in the context of CAP reform:

“A new consensus is needed which would accept removal of production subsidies and openness towards world markets but would recognise that many rural areas and producers require alternative supports for environmental or social reasons”.

It remains to be seen whether the government will match rhetoric with action in pursuit of CAP reforms and what the resulting policies will mean for the farmer and the countryside.

6 REFERENCES

- ¹ Brouwer, F. and Lowe, P. (1996). CAP Reform and the Environment . In :Brouwer, F. and P.Lowe (eds.) Cap and the Rural Environment in Transition: a panorama of national perspectives. Wageningen Pers, Wageningen, pp. 12-38.
- ² The European Community Fifth Environmental Action Programme. European Commission, 1992, p.15, para 25.
- ³ Meeus, J.H.A., Wijermans, M.P., Vroom, M.J. (1990). Agricultural landscape in Europe and their transformation. Landscape and Urban Planning, 18, 289-352.
- ⁴ Our Common Future. The Brundtland Report, 1987.
- ⁵ <http://www.irishnews.com/current/news22.html>
- ⁶ The Place of Agriculture in Sustainable Development: The Way Forward on SARD. Committee on Agriculture (FAO), Sixteenth Session, Rome, March 2001.
- ⁷ <http://www.oecdobserver.org/news/fullstory.php/aid/512.html>
- ⁸ Altieri, M.A. and Rosset, P.M. (1997). Agroecology versus Input Substitution: A Fundamental Contradiction of Sustainable Agriculture. Society and Natural Resources, 10, pp283-295.
- ⁹ Ibid
- ¹⁰ Legg, Wilfred Sustainable Agriculture: An Economic Perspective. (<http://www.oecd.org/agr/News/index8.htm>)
- ¹¹ *In* Towards Sustainable Agriculture: A Pilot Set of Indicators. MAFF Publications
- ¹² Lowe, P. (1996). Blueprint for a rural economy. *In*: Allanson, P., Whitby, M. (eds.), The Rural Economy of the British Countryside. Earthscan, London) Chapter 10).
- ¹³ Brouwer, F and Lowe, P. (2000). CAP and the Environment: Policy Development and the State of Research. *In* CAP Regimes and the European Countryside (eds. F.Brouwer and P. Lowe). CABI Publishing, Wallingford.
- ¹⁴ Lowe, P. and Baldock, D. Integration of Environmental Objectives into Agricultural Policy Making *in* CAP Regimes and the European Countryside (eds. P.Brouwer and P.Lowe).
- ¹⁵ Neville-Rolfe, E. (1983). The Politics of Agriculture in the European Community. Croom Helm, London.
- ¹⁶ IEEP. The Effectiveness of EU Council Integration Strategies and Options for Carrying Forward the 'Cardiff Process'. March 2001.
- ¹⁷ Winter, M. and Gaskell, P. (1998). The Agenda 2000 debate and CAP reform in Great Britain. Is the environment being sidelined? Land Use Policy, vol.15, No. 3, pp.217-231.

- ¹⁸ Winter, M. (2000). Strong policy or weak policy? The environmental impact of the 1992 reforms of the CAP arable regime in Great Britain. *Journal of Rural Studies*, 16, pp.47-59.
- ¹⁹ Rural Development Regulation (Council Regulation (EC) No. 2078/92
- ²⁰ Clark, J.R.A., Jones, A., Potter, C.A., Lobley, M. (1997). Conceptualising the evolution of the European Union's agri-environment policy: a discourse approach. *Environment and Planning A* 29, 1869-1885.
- ²¹ Winter, M., Rutherford, A., Gaskell, P. (1997). Beef farming in the LFAs of England, Wales and Scotland: the response of farmers to the 1992 CAP reform measures and the implications for meeting world trade obligations. In: Laker, J., Milne, J. (Eds.), *Livestock Systems in European Rural Development*. Macaulay Land Use Research Institute, Aberdeen, pp.101-111.
- ²² Ackrill, R.W. (2000). CAP Reform 1999: A Crisis in the Making. *European Agenda*, 38(2) pp343-53.
- ²³ <http://europa.eu.int/comm/environment/agenda2000/agriculture.htm>
- ²⁴ Margaret Beckett addresses DEFRA staff, July 11th 2001.
- ²⁵ Secretary of State's Speech – Meeting the challenges-a vision of the future - made to the RSPB conference: 'The Future of Food and Farming', July 17th 2001
- ²⁶ From Bad to Worse Down on the Farm. *The Economist*, March 1st 2001.
- ²⁷ Ibid
- ²⁸ The implications for UK agriculture and EU agricultural policy of trade liberalisation and the WTO round. Select Committee on Agriculture Sixth Report. June 2000.
- ²⁹ Environment, Transport and Regional Affairs Committee. Seventh Report. Rural White Paper, p.xxiii, Volume 1.
- ³⁰ Agriculture and the Environment: Issues and Policies.
- ³¹ Lewontin, R.C. Agricultural research and the penetration of capital. *Science for the People*, 14, pp.12-17
- ³² Hamilton, N.D. (1994). Agriculture without farmers? Is industrialisation restructuring American food production and threatening the future of sustainable agriculture? *North Illinois University Law Review* 14, pp.613-657.
- ³³ The National Farmers' Union. A strategy for UK agriculture
- ³⁴ Strategy for Sustainable Land Management in England. The Countryside Agency
- ³⁵ Q and A on Lord Haskins. *The Times*, August 6th 2001
- ³⁶ Blair's farm supreme calls for end to 'mollycoddling'. *The Times*, August 7, 2001
- ³⁷ Interview in *Farmers Weekly*, p.14, August 17-23, 2001.

³⁸ Commission of the European Communities (1992). Farm Household Adjustment in Western Europe 1987-91, Final Report on the Research Programme on Farm Structure and Pluriactivity. Commission of the European Communities, Brussels.

³⁹ Lowe, P and Ward, N. (1998). Regional Policy, CAP Reform and Rural Development in Britain: the Challenge for New Labour. Regional Studies, vol. 32.5, pp.469-479 (Policy Review Section)
