

*CHAPTER SIX***REALITY-MAINTENANCE AND THE  
POLITICS OF SOCIAL CHANGE**

In this chapter I examine how the dominant agriculture paradigm responded to changes within its external environment, particularly to the challenge alternative agricultural solutions posed to its version of reality. Specifically, I am interested in the mechanisms by which the dominant agricultural paradigm seeks to hinder or buffer the development of an alternative agriculture system. This requires a closer scrutiny of the mechanisms available to a society for reality-maintenance and its politics of introducing evolutionary change as a means to reabsorbing control. First of all, I look at how the scientific truth regime conditions the outcome of the debate on biotechnology by successfully re-negotiating the science-society boundary to its own advantage. I will also ask who is disenfranchised as a result of this. Secondly, using the example of agri-environmental schemes, I will explore similar themes in order to illustrate how the greening of modern industrial agriculture helped to sustain existing practices, structures and interests. Finally, I examine how the emergence of new meanings such as organic and sustainable agriculture functions to keep ecological agriculture at bay.

## 6.1. Setting the Agenda for Agricultural Development: The Case of Biotechnology

In this section I will explore how the knowledge system, by defining the appropriate research agenda and method, determines the kind of development agriculture is to undergo and who is to determine and thus control this development. I will also examine whose voices and what concerns are excluded and marginalised in this debate. This will provide an indication of how the dominant knowledge system conditions the outcome by setting the agenda on biotechnology.

The discovery of the double helix structure of the DNA molecule opened the door to a new era of scientific investigation, biotechnology. This allowed for a number of innovative research programmes to be carried out in the field of agriculture. Monsanto, for example, has developed a blue cotton which reduces the need to dye the material aimed for blue jean production. Similar research seeks to create 'polyester cotton' which, it is hoped, will improve its easy-care and insulation properties, making cotton suitable for winter wear.<sup>1</sup> Other research projects focus on the development of herbicide-resistant plants, such as transgenic tobacco and cotton which are both resistant to the commonly used herbicide 2-4D. These developments allow for weeds to be sprayed without damaging the crops. Other projects seek to produce synthetic substitutes for commodities such as vanilla, cocoa and coffee. New transgenic crops have been developed, such as late-ripening tomatoes and virus-resistant squash and potatoes with a built-in insecticide. Genetic modification in potatoes, for example, could increase the availability of UK varieties by extending the growing season

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<sup>1</sup> DTI, BMB Initiative, *Biotechnology in Industry*, Status Report 1998 (London: DTI, Chemicals and Biotechnology Directorate, 1998), p.7.

through introducing stress tolerance characteristics. Furthermore, their shelf life could be extended by suppressing sprouting and reducing rots.<sup>2</sup> With regard to livestock, projects such as the featherless chicken and the self-shearing sheep are being worked on.<sup>3</sup> What these examples seem to suggest is that the products developed by means of biotechnology help to sustain current patterns and practices of food production, processing, distribution and consumption. As the *Biotechnology Means Business Initiative* claims, biotechnology has provided “crops with the qualities designed for the modern retail chain and for higher process efficiency.”<sup>4</sup> Zeneca argued that “Biotechnology will allow in the future the better tailoring of the raw material attributes of the crop to the specific desired end use”.<sup>5</sup> In other words, genetic modification “is simply allowing a system that is not quite as efficient as it could be, to be more efficient.”<sup>6</sup> In fact, as Jonathon Jones from The Sainsbury Laboratory, John Innes Institute argued: “We have to accept responsibility for managing the global ecosystem. We have to deploy technologies with less environmental impact, rather than attempt to revert to some bygone time before we ever messed it up.”<sup>7</sup> Rather than reverting to some bygone time where farmers worked with natural processes and used the traditional system of mixed farming and crop rotation, biotechnology is perceived as being able to offer a solution to some of the problems caused by intensive farming

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<sup>2</sup> NFU, ‘The Benefits’, Report of the Biotechnology Working Group, [www.nfu.org.uk/pubs/biote.asp](http://www.nfu.org.uk/pubs/biote.asp).

<sup>3</sup> Richard Buckley (ed.), *The Future of Farming: What Price the Food We Eat? Understanding Global Issues* (Cheltenham: Understanding Global Issues, 1997), pp.12/13.

<sup>4</sup> DTI, BMB Initiative, *Status Report: Food* (London: DTI, 1995), p.1.

<sup>5</sup> Memorandum by Zeneca Agrochemicals and Zeneca Plant Science, House of Lords Select Committee on the European Communities, Session 1998-99, 2<sup>nd</sup> Report, *EC Regulation of Genetic Modification in Agriculture* (London: HMSO), 15 December 1998, Report and Evidence, para.7, pp.19/20.

<sup>6</sup> Professor John Beringer, Dean of Science, University of Bristol and Chairman of the Advisory Committee on Release into the Environment, giving evidence to the House of Lords Select Committee on the European Communities, *ibid.*, Evidence, Q17, p.4.

<sup>7</sup> Quoted in *Food Magazine*, Vol. 1, No. 8, (January/March 1999), p.24.

practices.<sup>8</sup> This attitude is reflected in the type of biotechnology research projects that are supported by the BBSRC (Biotechnology and Biological Science Research Council), which also reveals the reductionist, mechanistic nature of these research interests:

- Finding ways to prevent or control important infectious diseases of livestock
- Improving animal health by the development of recombinant vaccines
- Improving nutrition, growth, lactation and reproduction through the use of modified micro-organisms, feed additives, in vitro fertilisation and embryo transfer
- Improving the tolerance of plants to the changes brought about by global warming;
- Improving the keeping properties of fresh vegetables and fruit;
- Finding more environmentally friendly ways to control pests and diseases of crops;
- Incorporating important genes into crops;
- Producing more sustainable farming systems;
- Generating wealth creating products from plants, animals and microbes.<sup>9</sup>

Similarly, the argumentation presented by the NFU in favour of the technology reveals the nature of the value system that promotes biotechnology, namely market competitiveness, efficiency and productivity. The NFU considers biotechnology to be the “Start of a new agri-revolution” and a positive innovation.<sup>10</sup> It argues that biotechnology “can play an important and innovative role in maintaining the competitiveness of UK agriculture and horticulture. Biotechnological innovations have the potential to make farming and growing more effective by maximising potential yields, improving the consistency, nutritional content and quality of crops, and reducing pesticide and herbicide use.”<sup>11</sup> The NFU wants to see legislation eased

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<sup>8</sup> House of Commons, Science and Technology Committee, Session 1998-99, First Report, *Scientific Advisory System: Genetically Modified Foods*, Volume I, Report and Proceedings of the Committee, 12 May 1999 (London: HMSO), para.82, p.xxxiii.

<sup>9</sup> DTI, *Bioguide: Research Councils*, [www.dti.gov.uk/bioguide/research.htm](http://www.dti.gov.uk/bioguide/research.htm)

<sup>10</sup> *British Farmer*, Vol.4. Vo.10 (December 1988), p.20.

<sup>11</sup> NFU, ‘Introduction’, *Report of the Biotechnology Working Group*, [www.nfu.org.uk/pubs/biote.asp](http://www.nfu.org.uk/pubs/biote.asp).

to encourage technological developments in Europe and the UK<sup>12</sup> and chooses to cooperate closely with the industry on these matters. The *British Farmer*, the NFU's magazine, reported that the "NFU is now working with other industry bodies in a project to develop a common policy on biotechnology ... NFU has also hosted meetings at HQ with bodies such as Unilever, Dalety, the Institute of Grocery Distribution and Nestle to look at public perception and identify any potential problems which may emerge".<sup>13</sup> The NFU justifies its positive stance towards biotechnology by pointing to the economic environment that forces British farmers to be competitive:

UK agriculture and horticulture are part of a food industry which is adapting to the pressures of change from an expanding European Union, CAP reform, GATT and environmental pressures, as well as responding to changing consumer concerns and market requirements. In order to survive and succeed UK farmers and growers must continue to be competitive primary suppliers to the food chain. They must continue to minimise costs, improve productivity, enhance quality and develop new market opportunities while maintaining high animal husbandry and welfare standards, and helping to protect the environment. Biotechnology provides further opportunities to adapt to the pressures for change. It cannot be the solution to all our problems, but can play an important and innovative role in maintaining the competitiveness of UK agriculture and horticulture.<sup>14</sup>

In other words, agricultural development, according to the NFU, is no longer guided and directed by indigenous concerns such as natural constraints, the locality or even the farmer who practises food production. Today, advances in agricultural knowledge

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<sup>12</sup> 'Will Red Tape Throttle UK Plant Biotech?', in *British Farmer*, Vol. 9, No. 8 (October 1993), pp.4/5.

<sup>13</sup> 'NFU Pushes Forward Debate on Biotechnology', in *British Farmer*, Vol. 11, No. 10 (December 1995/January 1996), p.6.

<sup>14</sup> NFU, *Report of the Biotechnology Working Group*, 'Justification and Need', [www.nfu.org.uk/pubs/biote.asp](http://www.nfu.org.uk/pubs/biote.asp).

and technology respond to and are determined by external social constructs and man-made laws, such as CAP and the WTO.

Consecutive British governments have also held a positive and enthusiastic stance towards biotechnology. In *Sustainable Development: The UK Strategy*<sup>15</sup> a strong commitment on behalf of the Conservative Government towards the biotechnology industry was expressed:

21.3 ...The Government will continue to support UK research in potential medical, scientific, environmental and agricultural applications of biotechnology...

21.6 Modern biotechnology using GMOs has a prominent role to play in economic development and sustainability: not only does it have the potential to provide new and valuable products, but it can also help to improve the environment. The Government is encouraging the development of such "green" products.

21.12 The Government is keen to ensure that the degree of regulatory control applied to biotechnology is commensurate with the level of risk, with no unnecessary burdens being placed on the biotechnology industry and its considerable economic potential. As experience grows, and certain organisms and operations are shown to be of low risk and, therefore, to be compatible with sustainable development, regulatory control will be relaxed.

21.14 The Government's aim is to promote a climate that will allow maximum trade in biotechnology products and impose minimum burdens on those investing in and developing the technology...

The Bioguide published by DTI in 1996 confirmed the Government's aim to promote biotechnology

... by providing the climate for business success through fostering science and innovation; encouraging start-up and growth of small and medium-sized firms; promoting open and fair markets; and ensuring balanced regulation. It will also continue to work for a supportive regime throughout Europe.<sup>16</sup>

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<sup>15</sup> Cm 2426, *Sustainable Development: The UK Strategy* (London: HMSO, January 1994).

<sup>16</sup> DTI, *Bioguide: Regulation, Information and Support for Biotechnology in the UK* (London: DTI, 1996), p.1.

This favourable stance was maintained under the Labour Government. Currently, the UK Government is funding approximately £600 million on bioscience research and development annually.<sup>17</sup> Stephen Byers, in a speech to the Biotechnology Industry Association, suggested that politicians “should be a supportive ally” of science. He stressed his department’s “continuing support for your increasingly important sector” and promised that the government is taking steps to improve the tax framework to create a positive environment which included a £150 million Enterprise Fund currently created with the private sector.<sup>18</sup> The first initiative to promote biotechnology amongst UK industry, launched in 1995 by the DTI, was able to draw on a four year budget of £13 million. This initiative offers a help line, and grant support “to help industry realise these benefits” and “to stimulate the uptake of biotechnology in industry.”<sup>19</sup>

In general, proponents present biotechnology as a natural process, essentially ‘green’ and environmentally friendly. Biotechnology is presented as having been around for a very long time. According to a report by the Department of Industry

People have used biotechnology for centuries. For example, through using selective breeding to change the gene set ... Fermentation processes have been used for centuries to produce beer and wine and yoghurt, and naturally occurring enzymes have been used to produce cheese, and other foods.<sup>20</sup>

Today’s biotechnology, it is claimed, is merely more advanced. “Compared with more traditional methods, biotechnology can lead to better, faster, cleaner, cheaper and

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<sup>17</sup> DTI, *Genome Valley: The Economic Potential and Strategic Importance of Biotechnology in the UK*, Report (London: DTI, December 1999), p.ii.

<sup>18</sup> Stephen Byers, *Speech to Biotechnology Industry Association*, 21 January 1999. [www.dti.gov.uk/Minspeech/byers220199.htm](http://www.dti.gov.uk/Minspeech/byers220199.htm).

<sup>19</sup> *BIO-WISE Newsletter*, Issue 1, January 1999.

<sup>20</sup> DTI, *Genome Valley*, 1999, op. cit., note 17, p.1. See also DTI, *Status Report: Food*, 1995, op. cit., note 4, p.1.

more efficient ways of doing things”.<sup>21</sup> “Put simply,” according to BIO-WISE, a DTI initiative to promote biotechnology amongst UK business, biotechnology “is the use of biological processes in manufacturing and service industries.”<sup>22</sup> A process in other words, with nature-corresponding properties. Biotechnology “is a technological force for cost-effective *greening* of industry”;<sup>23</sup> it can help farmers to “*protect the environment* through the use of non-polluting biological control products”.<sup>24</sup> The addition of enzymes to feed, according *Biotechnology Means Business*, “turns out to be environmentally friendly”,<sup>25</sup> because less waste will be produced by the farm animal. Other examples of this ‘rhetorical greening’ of the biotechnology discourse are “biological control agents”<sup>26</sup> when referring to ‘pest’ controls. However, under closer examination it will emerge that biotechnology’s environmental credentials derive from a comparison with conventional, modern, intensive farming practices, rather than with the ecological agricultural paradigm. As Michael Meacher from the Department of the Environment, Transport and the Regions argued:

The purpose of the farm scale plantings that we are beginning this year is to look at the difference in the impact on farm land wildlife from GM crops as compared to equivalent conventional crops ... The point which I would make is that one needs to make a distinction between the impact on farmland practice and wildlife that already exists from current farming practices, the intensification of agriculture which has existed now for several decades. We need to take that as a base line and what we are looking at is any incremental impact on the environment as a result of planting GM crops.<sup>27</sup>

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<sup>21</sup> BIO-WISE Newsletter, Issue 1, January 1999.

<sup>22</sup> BIO-WISE Newsletter, Issue 1, January 1999.

<sup>23</sup> BIO-WISE Newsletter, Issue 1, January 1999. Emphasis added.

<sup>24</sup> DTI, BMB Initiative, *Case Studies of Biotechnology in Action*, Bulletin, Issue 1. Spring 1996, p.11.

<sup>25</sup> *Ibid.*, p.6.

<sup>26</sup> *Ibid.*, p.11.

<sup>27</sup> House of Commons Science and Technology Committee, Session 1998-99, *Scientific Advisory System: Genetically Modified Foods*, Minutes of Evidence, Wednesday 26 April 1999, [286-vii]

Furthermore, there is the argument that biotechnology provides immense benefits to ‘Third World’ countries. The NFU argues that biotechnology “provide[s] a means of increasing the reliability of food production in underdeveloped and developing countries [through] the development of perennial crops, crops that can fix nitrogen, and plants that are more resistant to disease, cold, drought, salinity, and higher temperatures.”<sup>28</sup> And Monsanto suggests that GM crops help to save the rainforest:

Nearly all of the most productive and accessible farm land is already under cultivation, and it is the quest for further agricultural land which is leading to destruction of the wilderness and tropical forest areas ... The application of biotechnology to agriculture can help to provide some of the solution because biotechnology results in increased productivity per unit of useable farm land.<sup>29</sup>

These claims have received criticism. Richard Hindmarsh pointed to the flawed “sustainable” promise of genetic engineering,<sup>30</sup> and the World Development Movement dismissed the potential benefit of biotechnology to developing countries.<sup>31</sup> In fact, Jeff Rooker had to admit that “We have not got any evidence” for claims of fewer pesticide and herbicide use in agriculture, for MAFF had not carried out the farm trials.<sup>32</sup> Furthermore, there are also voices within the ecological camp that

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(London: HSMO 1999), Q.775, p.154. See also House of Lords Select Committee on the European Communities, *EC Regulation of Genetic Modification in Agriculture*, 1998, op. cit., note 5, para.90, p.28.

<sup>28</sup> NFU, Biotechnology Working Group, Evidence given to House of Lords Select Committee on the European Communities, *EC Regulation of Genetic Modification in Agriculture*, 1998, op. cit., note 5, Evidence, p.102.

<sup>29</sup> Supplementary Memorandum by Monsanto Services International S.A./N.V. House of Lords Select Committee on the European Communities, *EC Regulation of Genetic Modification in Agriculture*, 1998, op. cit., note 5, Evidence, pp.138/139.

<sup>30</sup> Richard Hindmarsh, ‘The Flawed “Sustainable” Promise of Genetic Engineering’, in *The Ecologist*, Vol. 21, No. 5 (October 1991), pp. 196-205.

<sup>31</sup> Memorandum from the World Development Movement, Appendix 17, House of Commons, Environmental Audit Committee, Fifth Report, Session 1998-99, *GMOs and the Environment: Coordination of Government Policy*, Volume II, Minutes of Evidence and Appendices, 11 May 1999, pp.147/148.

<sup>32</sup> House of Commons, Environmental Audit Committee, *GMOs and the Environment*, ibid., Volume II, Minutes of Evidence and Appendices, 11 May 1999, Q 286, p.67.

criticise the framework in which biotechnology is developed and presented. These critics recognise the integrity of Nature and thus consider biotechnology to be an ‘unnatural’ process. Biotechnology raises fundamental questions, they argue, over human’s relationship with Nature:

Already researchers in the field of molecular biology are arguing that there is nothing particularly sacred about the concept of a species. As they see it, the important unit of life is no longer the organism, but rather the gene. They increasingly view life from the vantage point of the chemical composition at the genetic level. From the reductionist perspective, life is merely the aggregate representation of the chemicals that give rise to it and therefore they see no ethical problem whatsoever in transferring one, five or even a hundred genes from one species into the heredity blueprint of another species. For they truly believe that they are only transferring chemicals coded in the genes and not anything unique to a specific animal. By this kind of reasoning, all of life becomes desacralized. All of life becomes reduced to a chemical level and becomes available for manipulation.<sup>33</sup>

However, the question of whether biotechnology and the practice of genetic modification are necessary, or ethically and morally justifiable, becomes a non-issue. The dominant knowledge system checks the rise of conflict by organising those critics that do not conform to its hard core assumptions out of the public arena and confines the scope of decision-making to those issues it can accommodate. Biotechnology is an advance made by science and therefore it is sanctioned as true and legitimate, as inevitable, and as part of human progress. The discovery of the double helix structure of the DNA molecule is presented as “one of the truly great scientific advances of this century ... [and a] new domain of scientific endeavour was to derive from this:

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<sup>33</sup> Jeremy Rifkin, *Declaration of a Heretic* (London: Routledge & Kegan Paul, 1985), p.53.

biotechnology”.<sup>34</sup> Biotechnology is not up for debate. The regime of truth has sanctioned and legitimated it, because it is derived from true scientific principles of investigation, carried out by scientists. Biotechnology, according to this knowledge system, is therefore natural and inevitable. Jack Cunningham insisted, when giving evidence to a House of Commons Select Committee, that

there is no question of our developing any exit strategy from any aspect of this scientific or technological development. In any event, if we did it would not work because the developments would just take place elsewhere in our competitor economies. That is the reality of it, and the idea that we can create some “Fortress Britain” and isolate ourselves from these or other developments in the increasingly globalised economy is just a pipe-dream.<sup>35</sup>

By presenting biotechnology as given and inevitable, biotechnology itself is turned into a non-issue. Instead, the criticism expressed against the technology is channelled towards the issue of risk assessment and risk reduction of the product that is developed by means of biotechnology. The Advisory Committee on Novel Foods and Processes argued that “The important point is that the focus should be on the products per se and their risk rather than on the technology used to produce them.”<sup>36</sup> Similarly, a House of Lords Select Committee concluded, “Risks arise not from the technology used to create a new organism but rather from the characteristics of the new organism itself.”<sup>37</sup> In other words, not the technology needs assessment but the very products created by the technology. And risk assessment of the product, ultimately, is the task

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<sup>34</sup> Commission of the European Communities, Group of Advisors to the European Commission, *On the Ethical Implications of Biotechnology* (Luxembourg: Office for Official Publications of the European Communities, 1996), p.5.

<sup>35</sup> House of Commons Science and Technology Committee, *Scientific Advisory System: Genetically Modified Foods*, op. cit., note 8, Minutes of Evidence Wednesday 28 April 1999, Q851, p.168.

<sup>36</sup> Advisory Committee on Novel Foods and Processes (ACNFP), *Consideration of Greenpeace Report on Genetic Modification*, [www.foodstandards.gov.uk/committees/acnfp/summary.htm](http://www.foodstandards.gov.uk/committees/acnfp/summary.htm).

<sup>37</sup> House of Lords Select Committee on the European Communities, *EC Regulation of Genetic Modification in Agriculture*, 1998, op. cit., note 5, para.40, p.15.

of trained experts and scientists: “Risk assessment is the scientifically-based process which attempts to identify and characterise hazards, and the likelihood of hazard occurring, risk.”<sup>38</sup>

To phrase the matter differently, the regime of truth determines the nature of the debate on biotechnology. It sets the boundaries by determining who is authorised to speak truth, notably scientists, and it decides on the methods of investigation, notably the scientific method. Critics can play certain tricks by applying the scientific method to prove that biotechnology products involve a risk factor. However, they cannot reverse or stop biotechnology because these critics have now embraced the scientific knowledge system themselves and by doing so they too have to accept biotechnology on the ground that it originated from scientific practices and is thus sanctioned and legitimate. Furthermore, in order to make legitimate claims about the risks involved in GM crops, for example, the critics have to engage in the planting and growing of these crops. As a result, these critics participate and use a technology whose development they seek to stop, they engage in the practice they do not wish to be carried out. By criticising genetic modification, these critics have to refer to the object of the dominant discourse, the gene, and thus give legitimacy to this unit of analysis. They thus give legitimacy to the subjectification of the gene. Ultimately, these critics grant legitimacy to biotechnology, precisely because they engage in it.

The regime of truth thus sets the boundaries for the legitimate discourse and the resulting practices. It also determines the political debate. The House of Lords Select Committee on the European Communities concluded that “Government should

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<sup>38</sup> Ibid., para.43, p.16.

take account of public opinion ... but decisions must still be based on sound scientific analysis and the need not to impede scientific progress".<sup>39</sup> As a result, the regime of truth excludes the wider public from participating in the debate. In the first instance, the public is excluded because assessing the issue of environmental and human risks involved in the release and use of GMOs falls into the domain of an objective science and hence the role of scientific experts. Emphasis is given to "science based risk assessment" and "the need to reach objective decisions".<sup>40</sup> Concerns about health or environmental risks will be decided upon on the basis of science: "[W]e will always act with caution, based on the best available science."<sup>41</sup>

Secondly, the ethical dimension of biotechnology also becomes restricted to the domain of expertise. "[T]o ensure that these concerns were fully addressed, the Government appointed an expert committee in 1992 to consider the concerns that might arise."<sup>42</sup> However, even in this case, the experts were asked to assess the ethical implications *of the use* of genetically modified food products, rather than the process of genetic modification itself. The task of the Committee on the Ethics of Genetic Modification and Food Use was "to consider the moral and ethical concerns (other than those related to food safety) that may arise from the use of food products derived from production programmes involving such organisms".<sup>43</sup> Specifically, this Committee investigated

- the transfer of human genes to food animals,

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<sup>39</sup> Ibid., para.123, p.36.

<sup>40</sup> DTI, *Biotechnology: A Multidimensional Challenge*, A summary report of Biotechnology: Looking Forward, a UK Presidency/European Commission Round Table, Borschette Centre, Brussels, Thursday 25 June 1998 (London: The Biotechnology Directorate, DTI, 1999), paragraphs 21/22, p.5.

<sup>41</sup> Message from the Minister. [www.gm-info.gov.uk/1999/message.htm](http://www.gm-info.gov.uk/1999/message.htm).

<sup>42</sup> MAFF, *Foodsens: Genetic Modification and Food* (London: MAFF, 1995), p.12.

<sup>43</sup> MAFF, *Report of the Committee on the Ethics of Genetic Modification and Food Use*, chairman Reverend Dr. JC Polkinghorne (London: HMSO, 1993), para.1.4, p.1.

- the transfer of genes from animals whose flesh is forbidden for use as food by certain religious groups to animals which they normally eat,
- the transfer of animal genes into food crops, and
- the use of organisms containing human genes as animal feed.

The report published by this Committee explicitly stated that “Neither were we asked to consider the wider question of the ethics of genetic modification in itself.”<sup>44</sup> The official debate over biotechnology, in other words, has never considered the issues from the standpoint of a holistic, spiritual and emotional ecological agriculture.

Although public attitudes seem to oppose biotechnology - when asked, 81 per cent of people wanted more investment into the organic sector compared with about ten per cent in the genetic engineering sector,<sup>45</sup> the wider public is nevertheless excluded from the debate. The critical public is not regarded as an electorate or a constituency but as consumers. Ministers believe that “addressing consumer concerns is our top priority,”<sup>46</sup> and that “We must deliver real consumer choice.” GM food, in other words, is not a political issue; it has become an economic issue dictated by the principles of the market. It is the state and scientific experts that control and dominate the issue of biotechnology. The public can only engage in the debate over labelling and regulation. “We have radically overhauled our regulatory and advisory system, which will mean that consumers will have a real voice and a real say in the process.” In other words, the consumer can decide when they purchase a product whether they accept the personal health risk. They can also voice their opinion on the labelling and regulatory system. But they are not to decide over whether genetically modification is to take place, whether the UK should pursue biotechnology. The public has been

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<sup>44</sup> Ibid., para.1.6, p.2.

<sup>45</sup> House of Commons Science and Technology Committee, *Scientific Advisory System*, op. cit., note 8, Minutes of Evidence Wednesday 10 March 1999, [286-iii], Q.275, p.57.

disenfranchised on the issue of biotechnology because the issue itself has been depoliticised. Biotechnology has remained a non-issue on the agenda of conventional political processes.

Meacher argued that the “Government does not control the whole of these developments ... This whole process has been driven by forces outside government. Our concern is to ensure that it does not damage consumers, that the public health is protected and the environment.”<sup>47</sup> Similarly, Rooker stated that “so far as science is concerned and taking the science forward, that is a matter for the companies concerned. The Government is in the role of being the regulator and guardian of the public interest in respect of the safety of individuals, our food and the environment.”<sup>48</sup> These statements, however, seem to contradict the stance of other Government departments on biotechnology. The DTI in particular believes that “Biotechnology has the potential to deliver huge benefits to the UK economy and quality of life. Government is determined that the UK will enjoy these benefits to the full.”<sup>49</sup> Biotechnology brings “economic benefits for countries with a strong science base.”<sup>50</sup> According to Stephen Byers, “In hard economic terms, biotechnology is an industry of the future – a knowledge driven industry – with great potential to create wealth and jobs. Exactly the sort of industry the Government wishes to promote.”<sup>51</sup> Biotechnology is a ‘clean’ industry and economically beneficial. According to the House of Commons Science and Technology Committee, biotechnology sales by the

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<sup>46</sup> Message from the Minister. [www.gm-info.gov.uk/1999/message.htm](http://www.gm-info.gov.uk/1999/message.htm). Subsequent quotes refer to this message.

<sup>47</sup> House of Commons, Environmental Audit Committee, *GMOs and the Environment*, op. cit., note 31, Volume II, Minutes of Evidence and Appendices, 11 May 1999, Q 292, p.69,

<sup>48</sup> Ibid., Volume II, Minutes of Evidence and Appendices, 11 May 1999, Q291, p.69.

<sup>49</sup> DTI, *Bioguide*, 1996, op. cit., note 16, p.1.

<sup>50</sup> House of Commons, Science and Technology Committee, *Scientific Advisory System*, 1999, op. cit., note 8, para.14, p.xi.

UK industry are forecast to reach £9 to £10 billion. “[S]ectors for which biotechnology holds most promise account for almost a quarter of the United Kingdom’s industrial output.”<sup>52</sup> The European Commission considers that “GMO technology has the potential for providing significant benefit to *our society*.”<sup>53</sup> And Mrs Keppelhoff-Wiechert, speaking on behalf of the European Parliament Committee on Agriculture and Rural Development, calls it “the key technology of the 21<sup>st</sup> century”.<sup>54</sup> As a result, biotechnology is highly funded and subsidised. As previously mentioned, the UK Government is funding annually approximately £600 million on bioscience research and development.<sup>55</sup>

It seems that biotechnology in agriculture is promoted not because of its potential for agriculture but because biotechnology itself is an emerging new industry with immense economic potential, and as such complies with the hard core of modern industrial societies. It is an industry that suits the image the Government has of *modern Britain*. Furthermore, the incentive for biotech companies to develop new genetically modified products has less to do with the product itself than with patent rights that guarantee the company a monopoly position on the market and thus control.<sup>56</sup> By incorporating the natural heritage into property and ownership relations,

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<sup>51</sup> Stephen Byers, Speech to Biotechnology Industry Association, 1999, op. cit., note 18.

<sup>52</sup> House of Commons Science and Technology Committee, *Scientific Advisory System: Genetically Modified Foods*, 1999, op. cit., note 8, Minutes of Evidence Wednesday 28 April 1999, Q848, p.167.

<sup>53</sup> COM (1999) 543, Commission of the European Community, Communication from the Commission, *Europe’s Environment: What Directions for the Future? The Global Assessment of the European Community Programme of Policy and Action in Relation to the Environment and Sustainability*, ‘Towards Sustainability’, 24 November 1999, para.4.2, p.14. Emphasis added.

<sup>54</sup> Mrs Keppelhoff-Wiechert, rapporteur in the Initiative Report on the impact of biotechnology on agriculture, Report (A4-0037/98), ‘The Impact of Biotechnology on Agriculture’, Debates of the European Parliament 1998/99 Session, Report of proceedings from 16 to 20 February 1998, in Official Journal of the European Communities, No 4-514, Minutes of 19 February 1998.

<sup>55</sup> DTI, *Genome Valley*, 1999, op. cit., note 17, p.ii.

<sup>56</sup> This argument was presented by Helena Paul (?) on BBC Radio 4 *You and Yours*, 7<sup>th</sup> June 2001.

*Biopiracy*<sup>57</sup> can now be capitalised upon. Agricultural practices and technologies change and embrace biotechnology not because this type of development was natural or inevitable, but because specific economic and political interests benefit from this type of development.

In conclusion, in this part I tried to illustrate how the scientific truth regime sets the agenda and determines the type of development agriculture is to undergo. The knowledge system narrows the agricultural agenda by determining the type of research that is to be carried out and the type of knowledge that is to be produced. In 1994, for example, the Agriculture and Fisheries Research Council was incorporated into the new Biotechnology and Biological Science Research Council.<sup>58</sup> Furthermore, the regime of truth limits the debate on biotechnology. The negative heuristic narrows the agenda to the issue of risk assessment of individual products by turning science and biotechnology in themselves into a non-issue. Official political processes do not provide an arena for a debate to take place on the wider ethical, social and environmental implications of biotechnology. Biotechnology, which the dominant agricultural paradigm presents as progress and as an inevitable and natural development in an era of globalisation, goes hand in hand with control, domination and disenfranchisement of the public at large. And the scientific truth regime is the common denominator that facilitates and assists both these developments.

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<sup>57</sup> Vandana Shiva, *Biopiracy: The Plunder of Nature and Knowledge* (Dartington: Green Books in association with The Gaia Foundation, 1998).

<sup>58</sup> Geoff Tansey and Tony Worsley, *The Food System: A Guide* (London: Earthscan, 1995), p.170.

## 6.2. The Integration of Green Ideas into Modern Industrial Agriculture: The Case of Agri-Environmental Schemes

In this part I will examine the greening of modern industrial agriculture in the 1980s and 1990s. Using the example of agri-environmental schemes I will explore why modern industrial agriculture incorporated green themes at the time it did and with what effects. In 1992, as part of the reform of the Common Agriculture Policy, the Council Regulation (EEC) No 2078/92 on agricultural production methods compatible with requirements of protection of the environment and the maintenance of the countryside was introduced. An earlier Council Regulation defined the purpose of environmentally sensitive farming as being “to preserve or improve [the] environment” in the sense of “no further intensification of agricultural production and that the stock density and the level of intensity of agricultural production will be compatible with the specific environmental needs of the area concerned.”<sup>59</sup> This meaning of ‘greener’ agriculture was carried over into the 1992 reform. On the one hand, the Regulation aimed at reducing intensive agriculture:

- (a) to use farming practices which reduce the polluting effects of agriculture;
- (b) an environmentally favourable extensification of crop farming, and sheep and cattle farming, including the conversion of arable land into extensive grassland;

On the other hand, farmers were given incentives in the form of aid measures to implement environmentally farming practices. This could involve

- (c) ways of using agricultural land which are compatible with protection and improvement of the environment, the countryside, the landscape, natural resources, the soil and genetic diversity;

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<sup>59</sup> Council Regulation (EEC) No 797/85 of 12 March 1985 On Improving the Efficiency of Agricultural Structures, in *OJL* 93, Vol. 28, 30 March 1985, Article 3.

- (d) the upkeep of abandoned farmland and woodlands where this is necessary for environmental reasons or because of natural hazards and fire risks, and thereby avert the dangers associated with the depopulation of agricultural areas;
- (e) long-term set-aside of agricultural land for reasons connected with the environment;
- (f) land management for public access and leisure activities;
- (g) education and training for farmers in types of farming compatible with the requirements of environmental protection and upkeep of the countryside.

In England, MAFF run seven agri-environmental schemes. These are Environmentally Sensitive Areas (ESAs), the Countryside Stewardship, Nitrate Sensitive Areas (NSAs), The Habitat Scheme, The Organic Aid Scheme, The Countryside Access Scheme, and The Moorland Scheme. In Wales, five such schemes were introduced, namely ESAs, the Moorland Scheme, the Countryside Access Scheme, the Organic Aid Scheme and Tir Cymen were introduced.

ESAs were initiated in the Britain. In August 1986, six ESAs were established in England and Wales, a number that was subsequently expanded to 12 throughout the UK in May 1987 and to 22 in the 1990s. In order to participate in an ESA scheme, farmers were asked to sign a five year agreement to maintain traditional farming practices, to prevent further intensification, and to carry out modest habitat and landscape restoration. The uptake was relatively successful. Within the first year of operation, over 100,000 hectares had been entered into agreements on 2,400 farms in England. However, despite the increase of the number of ESAs to 22, related to the total utilised agricultural area in Britain, only 4.5 per cent of land was subject to an ESA agreement by 1995.<sup>60</sup>

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<sup>60</sup> Clive Potter, *Against the Grain: Agri-environmental Reform in the United States and the European Union* (Oxon: CAB INTERNATIONAL, 1998), p.86.

Furthermore, there are two tiers to the ESA agreement. Tier 1 payments were given to farmers who agreed not to intensify production and to conserve the existing landscape. Tier 1 agreements, in other words, although halting further intensification, nevertheless maintained current intensive farming practices. The upper tier agreement, on the other hand, required farmers to change their land use and management patterns, by converting arable land to permanent grass, for example. More than 87 per cent of ESA land has been entered in the lowest tier.<sup>61</sup> In other words, by the late 1990s, on approximately 3.9 per cent of the total agricultural area in Britain *further* agricultural intensification was halted. Only on less than 0.6 per cent of the total agricultural land were land use and management pattern changed under the ESA scheme.

In 1991, an experimental Countryside Stewardship Scheme (CSS) was introduced in England, together with the Tir Cymen (TC) scheme in Wales. The object of these schemes was to “sustain the beauty and diversity of landscape, improve and extend wildlife habitat; conserve archaeological sites and historic features; improve opportunities for countryside enjoyment; restore neglected landscape features and create new habitats and landscapes”. A total of 92,500 hectares had been enrolled in CSS agreements by the spring of 1996.<sup>62</sup>

Ten Nitrate Sensitive Areas were designated in 1990 and a further 22 were launched in July 1994. This scheme encourages farmers to adopt farming practices that would reduce nitrate leaching. Only 19,611 out of the 35,000 hectares of eligible agricultural land had been entered into the scheme. The Habitat Scheme was launched in May 1994. It encourages farmers to create or improve wildlife habitats. 51,000

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<sup>61</sup> Ibid., pp.86-88.

hectares were covered by this scheme. The Countryside Access Scheme was launched in September 1994 and encouraged farmers to provide public access to land. The Moorland Scheme, launched in March 1995, imposed limits on the stocking densities. Under the 15 agreements signed up in 1995/96, 6,000 ewes would have been removed from moorland. And finally, the organic aid scheme was launched in July 1994. Since 1999, it is known as the Organic Farming Scheme. This scheme provides financial assistance to farmers who want to convert to organic farming methods. By October 1999, 700 farmers had been accepted into the new Organic Farming Scheme, with 60,000 hectares now being farmed organically.<sup>63</sup> The budget available for the organic scheme has generally been criticised for being inadequate to meet the number of applicants.<sup>64</sup> In 2000/2001 MAFF allocated £8.7 million to the organic scheme. This money, however, was taken up by second year payments from applications made the previous year. According to Phil Stocker from the Soil Association, "There is no existing money yet available for new applications in 2000/2001."<sup>65</sup> The budget for 2001/02 is £18 million, and a further £140 million were promised for a seven year programme to expand the organic sector.<sup>66</sup> To put this figure into context, to allow approximately 250 farmers to join the organic scheme, £10 million are required.<sup>67</sup>

The House of Commons Agricultural Committee launched a report on agri-environmental schemes in 1997. The general criticism voiced, even on behalf of very established organisations within the modern industrial agriculture paradigm, was that

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<sup>62</sup> Ibid., p.94.

<sup>63</sup> MAFF, *Review of Support to Organic Farmers*, News release 339/99, 4 October 1999.

<sup>64</sup> House of Lords Select Committee on European Communities, Session 1998-99, 16th Report, *Organic Farming and the European Union*, 20 July 1999 (London: HMSO), para.94.

<sup>65</sup> *Organic Farming*, Issue 64 (Winter 1999), p.8.

<sup>66</sup> MAFF, News release, 29 December 2000, [www.maff.gov.uk/inf/newrel/2000/0012299.htm](http://www.maff.gov.uk/inf/newrel/2000/0012299.htm).

<sup>67</sup> Elliot Morley, *Organic Farming*, Issue 64 (Winter 1999), p.18.

these schemes failed to introduce fundamental changes to the agricultural system. These schemes 'greened' modern industrial agriculture, but on the periphery only, in the specific area of the schemes set up on generally less productive agricultural land. The Countryside Commission, for example, argued that "environmentally friendly farming needs special incentives in all parts of the country, not just in areas with nationally important landscape types".<sup>68</sup> The organic aid/farming scheme is the only scheme available throughout Great Britain. Furthermore, although these green schemes discouraged farmers from using 'dangerous' farming practices, there is no guarantee that these practices might not be taken up again at a later stage. In general, these schemes have received a negative reception. The Game Conservancy Trust argued that "[e]xisting UK schemes under 2078/92 have an insignificant role in ameliorating the environmental problems caused by intensive arable agriculture and can only be regarded as an inadequate stopgap, pending transfer of a significant proportion of CAP subsidies into environmentally linked payments."<sup>69</sup> The RSPB argued that "The available evidence does not suggest that the reforms have reduced the intensity of arable farming in areas which remain cultivated. There is no evidence of reductions in the intensity of use of chemical fertilisers or pesticides by cereal growers ... The reforms have also effectively fixed the area devoted to arable production, maintaining specialisation of farm systems and discouraging a shift back towards mixed farming systems."<sup>70</sup>

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<sup>68</sup> Countryside Commission, *Incentives for a New Direction for Farming* (Countryside Commission: Manchester, 1989), p.11, quoted in Potter, *Against the Grain*, 1998, op. cit., note 60, p.93.

<sup>69</sup> House of Commons, Agriculture Committee, Second Report, *Environmentally Sensitive Areas and Other Schemes under the Agri-Environment Regulation* (London: HMSO, March 1997), Vol. 2, p.99.

<sup>70</sup> Royal Society for the Protection of Birds, *A Review of the 1992 CAP Reforms*.

Criticism was also directed at the disproportionate nature of the funding provided.<sup>71</sup> The Agricultural Committee established that in the year to 15 October 1996 the total expenditure from the guarantee side of EAGGF (the total EU farm budget) was 39 billion ecu, of which 1.4 billion ecu or 3.6 per cent had been spent on schemes operating under the Agri-environment Regulation.<sup>72</sup> The Committee report highlights that the market support regimes, or “conventional” support measures, contradict agri-environmental schemes. “This imbalance between agri-environmental expenditure and other support payments is currently pulling in favour of the status quo and has limited the uptake of several schemes operating in the UK”.<sup>73</sup>

The Council for the Protection of Rural England argued that “agri-environment payments are not competitive with mainstream agricultural supports” and recommends that this imbalance needs to be redressed.<sup>74</sup> And the Moorland Association argued that “it seems to the Association silly to encourage farmers through the agricultural support system to over-graze, and then to spend time and money devising schemes which pay them to limit the damage caused by their over-grazing.”<sup>75</sup> The WWF UK regrets that “Unfortunately the CAP with its arable area payments and quota system is locking British farming into a direction contrary to the aims of agri-environment schemes.”<sup>76</sup> In 1997, for example, farmer Justin Harmer ploughed parts of Offham Down SSSI (Sites of Special Scientific Interest) to grow

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<sup>71</sup> David Baldock and Guy Beaufoy, *Plough On! An Environmental Appraisal of the Reformed CAP*, a report to WWF UK from IEEP London (Godalming, Surrey: WWF UK, 1992), p.18.

<sup>72</sup> House of Commons Agriculture Committee, *Environmentally Sensitive Areas and Other Schemes*, 1997, op. cit., note 69, p.xvii. Mr Priebe warned that a straight comparison cannot be made because guarantee expenditure, except for agri-environmental measures, are 100 per cent. Agri-environmental measures are only co-funded to 50 or 75 per cent. Q.593, p.247, vol.2.

<sup>73</sup> *Ibid.*, pp.xvii/xviii.

<sup>74</sup> *Ibid.*, Volume II, Minutes of Evidence and Appendices, pp.82/84, para.7/16.

<sup>75</sup> *Ibid.*, Volume II, Minutes of Evidence and Appendices, pp.95/96.

<sup>76</sup> *Ibid.*, Volume II, Minutes of Evidence and Appendices, p.233.

flax, a crop for which EU subsidies of almost £600 a hectare are available.<sup>77</sup> Organic growers, on the other hand, receive subsidies of £70 per hectare, declining to £25 after five years, and nothing after that, compared to an “arable area payment” of £269.<sup>78</sup> To conclude, the Soil Association criticised that:

The main shortcoming with the agri-environment programme is structural. There is an inherent tension between the main elements of the CAP support regime and the agri-environment programme. Arable area payments and headage payments continue to encourage relatively intensive production as a consequence, so although the individual components of the agri-environment programme may be successful in meeting their stated objectives, they do so against a background of relatively intensive production systems which are applied on a much wider scale ... [S]o long as the lion’s share of CAP expenditure continues to encourage farmers to maintain existing relatively high stocking rates and to keep arable land in continuous crop production, many of the benefits achieved in designated areas will be more than offset by the damage on the farm land which lies outside the area covered by these schemes.<sup>79</sup>

It seems that agri-environmental schemes have failed to bring about any fundamental improvement for wildlife and the countryside, let alone a change in farming practices. So although from a polity-oriented perspective it appears that the agri-environmental policy “is very much being driven by environmental organisations”,<sup>80</sup> the impact they have achieved was only cosmetic and superficial in nature.

The introduction of agri-environmental schemes only make sense if examined from an economic perspective. Throughout the 1980s, surpluses were accumulating in the European Union. The expenditure on various market regimes increased by more than four times between 1973 and 1985. By the late 1980s, 70 per

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<sup>77</sup> Ros Coward, ‘The CAP Doesn’t Fit’, in *The Ecologist*, Vol. 29, No. 5 (August/September 1999), p.293.

<sup>78</sup> George Monbiot, ‘Organic Food Pollutes the Atmosphere’, in *The Guardian*, 5 November 1996, p.17.

<sup>79</sup> House of Commons Agriculture Committee, *Environmentally Sensitive Areas and Other Schemes*, 1997, op. cit., note 69, Volume II, Minutes of Evidence and Appendices, p.257.

cent of the EU budget was devoted on market support.<sup>81</sup> In July 1993 these surpluses reached 29 million tonnes for cereals, 847,000 tonnes for beef, 5.5 million litres for wine, 560,000 tonnes for dried fruit, 177,000 tonnes for butter, and 57,000 tonnes for olive oil.<sup>82</sup> As Clive Potter argued, the budgetary crises presented the most potent, and probably the only truly effective, stimuli for adjusting agricultural policies. He wrote that “it was only when the budgetary limits on farm expenditure were in danger of actually being breached in 1983 that reform became a genuine possibility, the European Council meeting of that year demanding an examination of the CAP”.<sup>83</sup> And with the inevitability of reform, he maintains, the farming representatives were “increasingly keen to treat with agri-environmentalists and their various policy proposals.”<sup>84</sup> Economic and political interests recognised the benefits the embracement of environmentalism could bring to farming. With public pressure growing, demanding a cut in subsidies for farmers, the agri-environmental schemes were welcomed by farmers as a new way of channelling support to their communities.

As Rosemary Fennel argued,

the [European] Commission presents farming as the preserver of the countryside, the provider of employment and the protector of the rural social fabric. It is not that the Commission has lost sight of the main purpose of farming but rather in the present circumstances perceives that to concentrate on the food producing role would not

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<sup>80</sup> Ibid., p.xxxviii.

<sup>81</sup> Potter, *Against the Grain*, 1998, op. cit., note 60, p.53.

<sup>82</sup> N. Jules Pretty and Rupert Howes, *Sustainable Agriculture in Britain: Recent Achievements and New Policy Challenges*, Research Series Vol. 2, No. 1 (London: International Institute for Environment and Development, 1993), p.2.

<sup>83</sup> Potter, *Against the Grain*, 1998, op. cit., note 60, p.54.

<sup>84</sup> Ibid., p.57.

provide a strong argument for the continued support of agriculture on the present scale.<sup>85</sup>

A similar point was put forward by Helen McHenry. She suggests that “while the farmers’ reactions to agri-environmental policy were often favourable, this was apparently because the ESA did not require much change in farming practice and farmers could receive reasonable payment.”<sup>86</sup> As a result, ESAs were predominantly set up in areas of marginal agricultural production, thereby providing a means to support the income of farmers in less favoured areas.<sup>87</sup>

Agri-environmental schemes were introduced not out of a growing concern with the environment emerging from inside the dominant agricultural paradigm but because of the irregularities and inadequacies that arose within the functioning of the dominant paradigm in the form of the accumulation of agricultural surpluses. These developments required the positive heuristic, the “powerful problem-solving machinery” to digest these anomalies in order to reinforce and confirm hard core principles. As a result, the political climate became more favourable towards finding new solutions and thus more open towards incorporating new issues and new actors. New political opportunity structures opened up for the environmental movement; it was included into the bargaining and consultation process both at the national and European levels, and the environmental issue was placed on the political agenda. However, since the political opportunity structure opened with the sole aim of strengthening and reinforcing existing hard core principles, environmental movements

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<sup>85</sup> Rosemary Fennel, ‘Reform of the CAP: Shadow or Substance?’ in *Journal of Common Market Studies*, Vol. 26, No. 1 (September 1987), p.77, quoted in Potter, *Against the Grain*, 1998, op. cit., note 60, p.108.

<sup>86</sup> Helen McHenry, ‘Understanding Farmers’ Perceptions of Changing Agriculture: Some Implications for Agri-environmental Schemes’, in Nigel Curry and Stephen Owen (eds.), *Changing Rural Policy in Britain: Planning, Administration, Agriculture and the Environment* (Cheltenham: CCP, 1996), p.237.

could only introduce new and additional assumptions into the protective belt. Their impact could only be marginal and superficial and lead to cosmetic reforms. As a result, agri-environmental schemes have rarely improved the state of the environment but instead helped to sustain existing practices, structures, support mechanisms and farming interests.

This means that rather than incorporating ecological principles and practices, or supporting and promoting ecological agriculture projects on a larger scale, this greening of modern industrial agriculture took the form of halting further intensification, and there only on the periphery and in areas of less productive agricultural land. Environmentally friendly agriculture is not guided, as is the case with ecological agriculture, by ethical considerations of being in harmony with Nature and respecting Nature on the basis of her having intrinsic values. Instead, the dominant agricultural paradigm attaches an instrumental value to the protection of the countryside. Environmentally sensitive farming becomes a service the farmer delivers to his fellow humans: “wherever society desires that farmers deliver an environmental service beyond this base-line level, this *service should be specifically purchased* through the agri-environment measures.”<sup>88</sup> In line with hard core principles, Nature and its protection become commodified. Care for the environment is not natural, according to the dominant agricultural paradigm, but a behavioural pattern that needs to be promoted by providing monetary rewards. Care for the environment is not natural, according to this paradigm, but a constraint on the farmer and needs to be compensated, as Franz Fischler wrote: “We must no longer take for granted the

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<sup>87</sup> Potter, *Against the Grain*, 1998, op. cit., note 60, p.109.

contribution made to society by farmers through environmental measures but must compensate them appropriately ... We must therefore create economic incentives for environmentally acceptable agriculture and alternative farming methods”.<sup>89</sup>

In other words, the effect agri-environmental schemes have had was to allow the continuation of subsidies to farmers by encouraging the presentation of farmers as the provider of a service in the form of stewarding the countryside. A new meaning has thus been attached to agriculture in order to allow farm subsidies to be maintained. The knowledge that correlates to the stewardship of the countryside, however, differs fundamentally to the knowledge that ecological agriculturists possess. Furthermore, the emergence of this new meaning and knowledge is accompanied by a new wave of bureaucratisation, scientific research and standardisation. It also imposes a new set of regulations, guidelines and controls upon the farmer, such as the MAFF series of *codes of good agricultural practices*, for example, which provide “a practical guide to help farmers and growers” avoid causing air and water pollution or long-term damage to the soil.<sup>90</sup> These codes, however, rather than to promote practices that do not cause the pollution of water, advise on better waste management strategies, that is on storage systems and disposal.

The greening of modern agriculture, in other words, is evolutionary in nature. Its hard core assumptions of farm businesses producing for a competitive

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<sup>88</sup> Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee and the Committee of the Regions, *Directions Towards Sustainable Agriculture*, (1999/C 173/02), in *OJC* 173, Vol. 42, 19 June 1999, p.12.

<sup>89</sup> Franz Fischler, ‘Foreword’, Commission of the European Communities, *Agriculture and Environment* (Luxembourg: Office for Official Publications of the European Communities, 1997), p.3.

<sup>90</sup> MAFF & Welsh Office Agriculture Department, *Code of Good Agricultural Practice for the Protection of Soil*, October 1998 (London: MAFF Publications). MAFF & Welsh Office Agriculture Department, *Code of Good Agricultural Practice for the Protection of Air*, October 1998 (London: MAFF Publications). MAFF & Welsh Office Agriculture Department, *Code of Good Agricultural Practice for the Protection of Water*, October 1998 (London: MAFF Publications).

market are maintained. Ecological perceptions and meanings are not only kept off the public agenda but are actively neutralised, again assisted by the scientific knowledge system, as the remainder of this section seeks to show.

The dominant agricultural regime of truth, by prioritising scientific knowledge, authorises scientists to make legitimate knowledge claims. By doing so the dominant scientific agricultural paradigm guides and restricts the development of agricultural knowledge by “prevent[ing] scientists from exploring comprehensive and new directions that do not fit the predominant paradigm”.<sup>91</sup> Secondly, the dominant regime of truth authorises certain practices merely on the basis that they used the right type of methods, as Dr Warren argued before the House of Lords Select Committee:

[R]esearch ... can be used to silence opposition to social and economic policies ... This kind of abuse began in the first agricultural revolution in the eighteenth century. In modern agriculture the use of pesticides and of new crop varieties ... is believed to be sanctioned by the mere fact that they have been the subject of laborious, complex, and very creditable research, development and testing.<sup>92</sup>

Thirdly, the dominant paradigm also marginalises the alternative by denying financial resources to carry out, promote and enhance ecological agriculture. Organic research projects into organic farming, for example, have for years been side-lined in relative terms. Compared to conventional agricultural research the budget for organic research remains relatively small. In the early 1990s, the government committed £3.5 over three years for research on organic farming, which amounted to an equivalent of 0.4

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<sup>91</sup> Rod J. MacRae, Stuart B. Hill, John Henning, Guy R. Mehuys, ‘Agricultural Science and Sustainable Agriculture: A Review of the Existing Scientific Barriers to Sustainable Food Production and Potential Solutions’, in *Biological Agriculture and Horticulture*, Vol. 6 (1989), p.173.

<sup>92</sup> House of Lords Select Committee on Science and Technology, Session 1983-84, 4th Report, *Agricultural and Environmental Research*, 5 July 1984 (London: HMSO), Vol. II, Evidence, para.25, pp.204/205.

per cent of the Government's overall agricultural research budget.<sup>93</sup> In 1998/99, the total spent on organic R&D was around £1.5 million, which amounted for an increase of 337,000 or 30 per cent.<sup>94</sup> In 1999, £2.2 million have been allocated by the Government for organic R&D,<sup>95</sup> compared to 52 million for research into genetically engineered food.<sup>96</sup>

Fourthly, the dominant agricultural paradigm silences alternatives by assigning a not-to-be-taken-seriously status to them on the basis that they lack scientific credentials. Alternative voices are stigmatised as incompetent, incoherent, and emotional because they are not based on the scientific discourse. The Fertiliser Manufacturers Association argues that

The Agricultural Industry in the UK is increasingly finding itself operating in a hostile climate. Much of that hostility is based on emotion rather than quantitative evidence ... [T]here is a ready and often ill-informed criticism of modern intensive agricultural practices ... The general public do not enjoy an especially well-informed attitude towards modern agriculture and, in particular, they are vulnerable to emotive journalism concerning environmental matters because they have no established base of knowledge to serve them.<sup>97</sup>

Science thus exercises a form of power that silences emotion, intuition, and alternative knowledge systems. This power forces practitioners of ecological agriculture to keep quiet about their experience and knowledges, as Peter Caddy at Findhorn experienced: “we couldn't tell them about the help and cooperation of the devas. People thought us

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<sup>93</sup> Kevin Watkins, 'The Mountains and the Mirage', in *The Guardian*, 22 November 1991, p.31.

<sup>94</sup> MAFF, News Release 136/98, 2 April 1998.

<sup>95</sup> Nick Brown, Speech at House of Commons Agriculture Debate, Thursday 28 October 1999, [www.maff.gov.uk/aboutmaf.minspeech/speeches/nb281099.htm](http://www.maff.gov.uk/aboutmaf.minspeech/speeches/nb281099.htm).

<sup>96</sup> George Monbiot, 'Agro-industrialists Rule', *The Guardian*, 9 December 1999.

<sup>97</sup> House of Lords Select Committee on Science and Technology, *Agricultural and Environmental Research*, op. cit., note 92, Vol. II, Evidence, p.154.

strange enough as it were.”<sup>98</sup> Similarly, when Prince Charles presented his speech to the Royal Society in which he questioned the chemical use in conventional farming, and where he encouraged farmers to embrace more environmentally friendly farming methods and to engage in a dialogue with environmentalists and consumers, the media reported that his ideas “were rejected yesterday as scientifically unsound and incompatible with efficient and competitive farming” and that his “vision for farming is flawed”<sup>99</sup>. This reporting was based on the reply by The Royal Agricultural Society of England (RASE) to this speech, published in the report on *The State of Agriculture in the United Kingdom*. This report argued that criticism of intensive farming, “is too often based on emotion, imperfect judgements unrelated to any science base”.<sup>100</sup> The criticism that is not derived by the right scientific method, criticism that is not objective but charged with emotion and intuition, is dismissed, suffocated and denied a taken-to-be-seriously status by the key players in the dominant agricultural paradigm. Agriculture as envisioned by Prince Charles, the report seems to suggest, is outdated in today’s modern world. The report points out that “[t]he image of an Arcadian-style, simple, ‘green’ agriculture, with a contrived non-intensive output, is incompatible with the aim of maintaining a competitive position in the market place.”<sup>101</sup> The Royal Society thus responded to Prince Charles by de-legitimising his claims because they are unrealistic in today’s modern world and lack scientific basis. Right in the opening sentences of the report, the Royal Society establishes why it has

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<sup>98</sup> The Findhorn Community, *The Findhorn Garden* (London: Turnstone Books, 1976), p.10.

<sup>99</sup> Michael Hornsby, ‘Prince Told his Vision for Farming is Flawed’, in *The Times*, 26 November 1991.

<sup>100</sup> Royal Agricultural Society of England (RASE), *The State of Agriculture in the United Kingdom: A Report to the Royal Agricultural Society of England*, prepared by a study group under the chairmanship of Sir Derek Barber (Stoneleigh, Warwickshire: Royal Agricultural Society of England, 1991), para.196.

<sup>101</sup> *Ibid.*, p.54.

the right to comment on the state of the agriculture, while Prince Charles has not. The first sentence of the introduction opens as follows:

On a memorable occasion in the spring of this year, His Royal Highness, The Prince of Wales, as President of the Royal Agricultural Society of England and a farmer in his own right, researching farming technology, delivered a wide ranging review of the agricultural industry.

RASE emphasised that its report, on the other hand, was able to draw on “a wealth of relevant scientific, technical, economic and political papers ... which could be buttressed by seeking the further counsel of the main players in the industry.” Furthermore, “[t]he machinery chosen for the proposal was a Study Group with wide and lengthy experience of farming and rural affairs. The Group has had, throughout, the services of two scientific advisers ... It met almost weekly between June and October.” It came to the conclusion that

a very large part of the criticism that modern farming is generally inimical to soil, plant and animal health and productivity is unsubstantiated and much public concern misconceived. The evidence is clearly defined in our report and is derived from the foremost authorities in the country. We argue that there should be much more persistent challenge to those who may unwittingly corrupt truth and the facts.

The report by the Royal Agricultural Society was informed by “the foremost authorities in the country”, it was compiled by a Study Group “with wide and lengthy experience of farming and rural affairs”, having at its service “two scientific advisers”. The Royal Society thus presents itself as informed and scientific, as opposed to Prince Charles, “a farmer in his own right”. Right from the introduction, therefore, the

impression is given that it is the RASE alone that is in the position to make statements on the state of the agriculture and should be listened to and trusted.<sup>102</sup>

Finally, economic criteria are defined by the dominant agriculture paradigm so as to present ecological agriculture as inefficient and unproductive, unable to feed the world's ever-growing population. As Vandana Shiva argued in her Reith 2000 lecture:

Yields usually refers to production per unit area of a single crop. Output refers to the total production of diverse crops and products. Planting only one crop in the entire field as a monoculture will of course increase its individual yield. Planting multiple crops in a mixture will have low yields of individual crops, but will have high total output of food. Yields have been defined in such a way as to make the food production on small farms by small farmers disappear ... From the biodiversity perspective, biodiversity based productivity is higher than monoculture productivity.<sup>103</sup>

The dominant agricultural paradigm, in other words, neutralises its ecological counterpart by ascribing a not-to-be-taken-seriously status to it. A vital ally in the process, I argued, is the knowledge system. Science exercises a form of power by forcing the alternative movement to use scientific discourse to prove its viability. Failure to do so renders ecological agriculture vulnerable to disqualification and marginalisation. Magic, spirituality, inner life forces and intuition are brushed aside for being unscientific. Solutions to the irregularities that have emerged within the dominant agricultural paradigm, in other words, are sought within the boundaries which the hard core, including the truth regime, set. As a result, only superficial or cosmetic reforms are introduced.

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<sup>102</sup> This reading of the RASE report was inspired by Harré et al. who illustrated that this type of tactical oppositioning in order to de-legitimise the opposition is not unique but was used by the British Nuclear Fuels, for example, to neutralise its critics. See Rom Harré, Jens Brockmeier, Peter Mühlhäusler, *Greenspeak: A Study of Environmental Discourse* (London: SAGE, 1999), pp.85/86.

### 6.3. The Appropriation of Ecological Concepts

In the previous section I examined how the dominant agriculture paradigm introduced evolutionary change to strengthen and reinforce its mode of functioning. In this section I explore how the dominant agriculture paradigm introduces evolutionary change so as to keep the development of an alternative, ecological agriculture system at bay. Specifically, I examine the process whereby two concepts of ecological agriculture, *organic* and *sustainable* agriculture, were appropriated by the modern agricultural paradigm to evaluate the implications this has had for ecological agriculture practices.

#### 6.3.1. The Case of Organic Production

In 1991, the Council Regulation (EEC) No 2092/91 on organic production of agricultural products was adopted.<sup>104</sup> In July 1999, the Council Regulation confirmed the non-compatibility of GMOs with organic production methods and also extended the organic regulation to livestock production.<sup>105</sup> This regulation is indexed under ‘Protection of Economic Interests’, which provides an indication of the purpose of this regulation. Essentially, it seeks to “ensure conditions of fair competition between the producers of products bearing such indications and give the market for organic products a more distinctive profile by ensuring transparency at all stages of production

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<sup>103</sup> Vandana Shiva, ‘Poverty and Globalisation’, *Respect for the Earth*, Reith 2000, [www.news.bbc.co.uk/hi/english/static/events/reith\\_2000/lecture5.stm](http://www.news.bbc.co.uk/hi/english/static/events/reith_2000/lecture5.stm).

<sup>104</sup> Council Regulation (EEC) No 2092/91 of 24 June 1991 on Organic Production of Agricultural Products and Indications Referring Thereto on Agricultural Products and Foodstuffs, in *OCL* 198, Vol. 34, 22 July 1991.

<sup>105</sup> Council Regulation (EC) No 1804/1999 of 19 July 1999 Supplementing Regulation (EEC) No 2092/91 on Organic Production of Agricultural Products and Indications Referring Thereto on

and processing, thereby improving the credibility of such products in the eyes of consumers”.<sup>106</sup>

The introduction of this Regulation set in motion the bureaucratisation of the organic sector. In order to ensure the compliance of producers with these rules, “all stages of production and marketing should normally be subject to inspection,” “carried out by designated inspection authorities and/or by approved and supervised bodies”. Article 9 of the regulation instructs member states to “set up an inspection system”. Member states have to designate an authority responsible for the approval and supervision of approved private bodies, such as the Soil Association.<sup>107</sup> One of the criteria that should be taken into account when approving a private body is “the availability of appropriate resources in the form of qualified staff, administrative and technical facilities, inspection experience and reliability”.

Organic producers are subject to annual and possibly unannounced visits for inspection. Furthermore,

Written and/or documentary accounts must be kept which enable the inspection body to trace the origin, nature and quantities of all raw materials bought, and the use of such materials; in addition, written or documentary accounts must be kept of the nature, quantities and consignees of all agricultural products sold. Quantities sold directly to the final consumer shall be accounted on a daily basis.<sup>108</sup>

This means that in order to be able to sell products as *organic*, experienced and “qualified staff” must have inspected the farm and the farm’s accounts and reported to the inspection body. The official organic symbol scheme encourages the organic

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Agricultural Products and Foodstuffs to Include Livestock Production, Article 14, in *OJL* 222, Vol. 42, 24 August 1999.

<sup>106</sup> Council Regulation (EEC) No 2092/91 of 24 June 1991 on Organic Production, op. cit., note 104, p.1.

<sup>107</sup> Unless stated otherwise, the term Soil Association will refer to the Soil Association Certification, the trading subsidiary of the charity.

producer to work closely with the inspection body. This contrasts sharply to ecological organic practices and the WFA, for example, where the farmer and the consumer come face to face and where their conduct is based on trust, interpersonal relationships, local knowledge and an ‘Open Gate’ policy. In the official organic symbol scheme, the state takes over this role and regulates, based on the reports of experts upon inspection of accounts and the farm. Under the WFA scheme, on the contrary, the organic producer signs a pledge before each growing season and displays this visibly to the consumer. In the official scheme, the organic producer pledges with the inspection body. While the official scheme standardises production and regulation, ecological organic farming recognises locality and diversity. The ISEC publication *Bringing the Food Economy Home* states that

Community-based minimum standards for local production and retailing would likely vary from place to place, influenced by local conditions and community values. Community peer pressure would ensure compliance with the agreed upon standards much more effectively than current national or state-wide systems, which are largely anonymous and rely upon expensive enforcement mechanisms. Local regulations would allow more flexibility, encourage more accountability, and would dramatically reduce the cost of both monitoring and compliance.<sup>109</sup>

The EU Regulation demands of the organic producer to contribute to the running of the scheme and to contribute “to inspection expenses”.<sup>110</sup> This has serious implications for smaller producers who cannot afford to pay these fees. However, MAFF insisted that “[a]nyone wanting to grow or process food which is to be sold as organic *must by law be registered* with UKROFS or a body approved by UKROFS

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<sup>108</sup> Ibid., Annex III, para.4.

<sup>109</sup> Helena Norberg-Hodge, Todd Merrifield and Steven Gorelick, *Bringing the Food Economy Home: The Social, Ecological and Economic Benefits of Local Food* (Dartington: ISEC, 2000), p.41.

and be inspected by them at least once a year.”<sup>111</sup> This means that anyone wanting to grow food which is to be sold as organic must also contribute to the inspection expenses. Since small growers cannot afford to pay for the scheme, their products cannot be sold as organic, as the members of the WFA experienced. As a result of the official appropriation of the term organic, many local and truly organic farmers were pushed out because they could not afford the fees that needed to be paid to gain the official organic symbol. This means, as an attendant of the *Resurgence Summer Camp 2000* argued, that large quantities of home-produced but non-registered *organic* products rot in Britain every year, while officially labelled organic products are imported into Britain from around the world. Furthermore, this attitude towards organic farming also contrasts sharply to the positive attitude towards biotechnology. Here, “The Government is keen to ensure that the degree of regulatory control applied to biotechnology is commensurate with the level of risk, with *no unnecessary burdens being placed on the biotechnology industry* and its considerable economic potential.”<sup>112</sup> Moreover, “The Government’s aim is to promote a climate that will allow maximum trade in biotechnology products and impose minimum burdens on those investing in and developing the technology”.<sup>113</sup> Such enthusiasm is largely absent in the area of organic farming.

In addition, the term *organic* according the Council Regulation, refers to a particular type of production method. “[O]rganic production methods constitute a specific form of production at farm level” which entails “significant restrictions on the

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<sup>110</sup> Council Regulation (EEC) No 2092/91 of 24 June 1991 on Organic Production, op. cit., note 105, para.2, p.5.

<sup>111</sup> MAFF, *Food Sense: Organic Food*, amended reprint June 1998 (London: MAFF), p.5. Emphasis added.

<sup>112</sup> Cm 2426, *Sustainable Development*, 1994, op. cit., note 15, para.21.12, p.142. Emphasis added.

use of fertilizers and pesticides which may have detrimental effects on the environment or result in the presence of residues in agricultural produce”. In other words, the meaning of *organic* attached to the concept by the EU Regulation differs fundamentally to that of ecological agriculture. Ecological “organic farming is an attitude of mind, it is not a technique”.<sup>114</sup> It “does not refer to the type of inputs used but to the concept of the farm as an organism, in which all the component parts – the soil minerals, organic matter, microorganisms, insects, plants, animals and humans – interact to create a coherent whole.”<sup>115</sup> It seeks to work within a closed system, draw upon local sources and knowledges, avoid pollution and minimise the use of fossil fuels.

Furthermore, the EU Regulation speaks of “*significant restrictions* on the use of fertilizers and pesticides which may have detrimental effects on the environment or result in the presence of residues in agricultural produce”. In other words, the official organic version does not specify the nature or source of inputs; it does not distinguish between natural and man-made chemicals. The official organic version allows for the use of specific fertilisers and pesticides. It also allows, although setting strict limits, the use of additives and processing agents. By restricting the meaning to the use of chemicals in the production of food, this Regulation invites a watering down of the term organic. The Advertising Standard Authority (ASA) ruled against a TESCO advertising which claimed that organic farming *avoids* the use of artificial pesticides. ASA considered TESCO’s claim to be misleading on the ground

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<sup>113</sup> Ibid., para.21.14, p.142.

<sup>114</sup> quoted in Anne Vine and David Bateman, *Organic Farming Systems in England and Wales: Practices, Performance and Implications* (Aberystwyth: Department of Agricultural Economics, University College of Wales, 1984).

<sup>115</sup> Nick Lampkin, *Organic Farming* (Ipswich: Farming Press, 1990), p.5.

that the EU Regulation allows for certain artificial products on the organic pesticide list to be used.<sup>116</sup> Similarly, organic products were also criticised for failing to prove that food produced without chemicals has a higher nutritious value. Sir John Krebs, the head of the Food Standard Agency (FSA), said that consumers buying organic food were “not getting value for money, in my opinion and in the opinion of the FSA, if they think they are buying extra nutritional quality of extra nutritional safety, because we don’t have the evidence.”<sup>117</sup> The term *organic* thus loses its significance. These presentations give the overall impression that organic products do not differ fundamentally from conventional production methods. The real alternative presented by ecological organic farming is thus hidden. Locally produced food that avoids food miles and packaging, and that relies on on-farm and local resources and knowledges, becomes non-existent because the term that used to describe this farming practice no longer applies.

It is not surprising therefore that the ecological organic community feels that conventional industrial agriculture has appropriated the term *organic*. Organic farming researcher Lawrence Woodward said that

I fear that the mainstream is changing us more than we are changing it. By and large our successes ... have been based on accommodating the essential character of conventional approaches to food production, processing and distribution.<sup>118</sup>

With supermarkets demanding big volumes of homogenous produce there is a renewed need for transportation, packaging and cosmetic perfection. As John Vidal

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<sup>116</sup> BBC, Radio 4, *You and Yours*, 6<sup>th</sup> June 2001.

<sup>117</sup> Interview with Sir John Krebs on BBC’s Country File, 3 August 2000, quoted in Andy Rowell, ‘Organicised Crime’, in *The Ecologist*, Vol. 31, No. 1 (February 2001), p.32.

<sup>118</sup> quoted in Kate de Selincourt, *Local Harvest: Delicious Ways to Save the Planet* (London: Lawrence & Wishart, 1997), p.100.

wrote in *The Guardian*, “There is nothing ‘natural’ about having organic produce wrapped in polythene and flown 3,000 miles across the world. Massive monocrops of ‘organic’ spuds or carrots may employ a few more people in back-breaking seasonal work, but it may do little to relieve social pressures.”<sup>119</sup> George Monbiot in fact urges the Soil Association to

go further, by introducing a far stricter set of organic standards. These would take into account the distance food has travelled (with a limit perhaps, of 80km for carrots, but 8,000 for bananas). They would reward seasonality, ensuring that an apple sold in May would not be approved. They would set a size limit for organically certified farms.<sup>120</sup>

The issue of organic farming also illustrates the compromise organisations have to make if they choose to co-operate with the industrial agricultural paradigm in the hope to change it. As mentioned in chapter five, the Soil Association was founded by Lady Eve Balfour, its aim being “to research, develop and promote sustainable relationships between the soil, plants, animals, people and the biosphere, in order to produce healthy food and other products while protecting and enhancing the environment.”<sup>121</sup> Furthermore, the early organic movement was opposed to the centralising state. According to Mary Langman, the early organic movement in the 1930s and 1940s was passionate in its opposition to the centralising state, and therefore closer to anarchism than any other political movement. Its holistic message embraced a vigorous “defence of locality”.<sup>122</sup> Today, however, the Soil Association has shifted from the local knowledge system to the expert-scientific knowledge system. In *A Manifesto for*

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<sup>119</sup> John Vidal, ‘Viewpoint: Carrot and Stick’, in *The Guardian*, 1 October 1997, p.24.

<sup>120</sup> George Monbiot, ‘The Organic Bandwagon’, in *Resurgence*, No. 205 (March/April 2001), p.17.

<sup>121</sup> Soil Association Certification Ltd. *Standards for Organic Food and Farming* (Bristol: The Soil Association, 1998), para. 9.101, p.95.

<sup>122</sup> Patrick White, ‘In the Royal Field of Dreams’, in *The Guardian*, 17 June 1993, p.2.

*Organic Agriculture*, the Soil Association stated that “A more effective *policing system* is needed”<sup>123</sup> and that “The role of organic farming in future agricultural policy requires *professional assessment*, carried out by *research liaising with both government scientists and representatives* of organic growing bodies.”<sup>124</sup> As White argues, “the body that started out in open distrust of the centralising state, and which was inclined to defend the diversity of organic practice against bureaucratic standardisation, now finds itself an instrument of the most labyrinthine bureaucracy.”<sup>125</sup>

Furthermore, the Soil Association found itself in the position where it had to reprimand true ecological organic producers. The WFA, as mentioned, restricts the use of chemical input, is concerned with the re-creation and maintenance of local community structures, and pays attention to other environmental concerns, such as food miles. The WFA provides an alternative to the official organic certifying bodies and even goes beyond what the official scheme requires of its organic producers. The WFA operates without bureaucratic procedures and inspection systems required by the official bodies. Instead, the link between the farmer and the consumer is re-established. Farming methods are discussed directly with the consumer, rather than an inspector. However, its members cannot afford to pay the annual fees the official organic scheme demands. Yet because it “is illegal to sell food as organic unless it has been produced in accordance with the requirements” set out in the official regulation *and* “by a producer who is registered with, and subject to, inspection by a recognised

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<sup>123</sup> The Soil Association, *A Manifesto for Organic Agriculture* (Bristol: The Soil Association, n.d.), para.2. Emphasis added.

<sup>124</sup> *Ibid.*, para.7. Emphasis added.

<sup>125</sup> White, ‘In the Royal field of Dreams’, 1993, *op. cit.*, note 122, p.2.

organic sector body”<sup>126</sup>, WFA members are not allowed to sell their produce as being organic. In fact, as the WFA experienced, the Soil Association “strongly reacted to us using the word ‘organic’. We stopped using the word anywhere in our literature. The Soil Association said that ‘we own the word’ and that we could not use it in any way. Legally, you cannot use it to describe your product or as a label on your product unless you pay.” The Soil Association, despite its attempt to promote local food production and consumption,<sup>127</sup> as an organic certification body also contributes to the neutralisation of the WFA and the many small producers it represents. As the WFA discovered, “It seemed obvious to us that the certification bodies had no intention of assisting the smallholder and were focusing on the large, broad acre farms.” By insisting on the fact that it *owns* the term organic, the Soil Association subscribes to the capitalist concept of property. It seeks to exploit the term organic for the financial ends of its members. The Soil Association prioritises human organisations and their economic principles over and above the need for more harmonious, environmentally benign practices. What is more, the Soil Association needs to protect the term so as to justify its existence, and thus to guarantee its own survival, as a government-approved inspection body. The rationale of a market-oriented organic regulation system thus contrasts sharply to the ecological principles not only of sharing for the benefit of the wider social and natural environment but also of a more inclusive concept of Nature and humankind.

The case of organic farming highlights the need to shift the focus beyond conventional political processes and to scrutinise the type of change that has been

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<sup>126</sup> MAFF, *Organic Farming Scheme*, ‘Objectives’, [www.maff.gov.uk/environ/envsch/ofs.htm](http://www.maff.gov.uk/environ/envsch/ofs.htm).

introduced as a result of social movement activism in order to evaluate the effects these changes have had for alternative ecological projects. Social movements might have been successful in introducing organic farming into mainstream agriculture, while the Soil Association has become firmly established as a key player in administering the organic certification scheme. And yet, as I showed in this section, power relations are exercised outside and independent of the conventional political framework. These take the form of bureaucratising and inspecting the organic sector and of appropriating the ecological concept of *organic* by attaching a new meaning to it, a meaning informed by the core principles of modern industrial farming. In the UK, as in other modern industrial agriculture systems, organic farming underwent a “conventionalization”.<sup>128</sup> As a result, the real alternative presented by ecological farming is hidden. What is more, organisations that have gained the status of a legitimate agent in the organic scheme, such as the Soil Association, actively assist in denying ecological producers the status of *organic* producers.

### 6.3.2. The Case of Sustainable Agriculture

Ecologism is a societal model that seeks to accommodate its practices so as to live in harmony with Nature. This normative orientation is reflected in the notion of sustainability. Tony Wrench, in a recent article in the *Permaculture Magazine*,

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<sup>127</sup> On *Local Food Links*, the Soil Association project, see for example, ‘Linking Farmers and Consumers’, in *Living Earth*, No. 196 (October 1997), p.18. *Living Earth*, No. 212 (October-December 2001), entitled ‘Eat Organic Buy Local’.

<sup>128</sup> Daniel Buck, Christina Getz and Julie Guthman, ‘From Farm to Table: The Organic Vegetable Commodity Chain of Northern California’, in *Sociologia Ruralis*, Vol. 37, No. 1 (April 1997), p.15. See also Pernille Kaltoft, ‘Values about Nature in Organic Farming Practices and Knowledge’, in *Sociologia Ruralis*, Vol. 39, No. 1 (January 1999), pp.39-53. Hilary Tovey, ‘Food, Environmentalism and Rural Sociology: On the Organic Farming Movement in Ireland’, in *Sociologia Ruralis*, Vol. 37, No. 1 (April 1997), pp. 21-37.

captures this notion by defining the parameters of sustainability as follows. First, sustainability comprises an ethical dimension which promotes balance – “balancing care for the earth with care for our fellow humans.” This involves the recognition that “we are all equal and have rights to live peaceably and fruitfully on the earth, and have duties to work towards an equitable use of the earth’s resources.” Secondly, sustainability means “that we are looking at a very long time scale – longer than any political party has ever remained in power; longer than any one human being has lived. We are looking beyond our simple human concerns to the wellbeing of the whole ecosystem – all life on earth.” The application of these two dimensions of sustainability has implications for our conduct. These normative orientations determine practices:

- Only using resources that can be replaced or renewed.
- Only consuming resources at a rate that is renewable.
- Not using more than our fair share, as individuals and regions, of any resource.
- Not generating more waste or pollutants than natural processes can deal with.<sup>129</sup>

The application of ecological sustainability to agriculture leads to a distinct set of practices and knowledges, as outlined in chapter five. In contrast to conventional agricultural approaches which focus on linear processes to achieve the required outcome, which is food, ecological agriculture takes a holistic approach. Ecological agriculture pays attention to the way in which food is produced and thus seeks to achieve agricultural practices that do not harm Nature, while also paying attention to the social dimension of agriculture, namely the local food economies where food is produced, distributed and consumed.

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<sup>129</sup> Tony Wrench, ‘A Strategy for Sustainability’, in *Permaculture Magazine*, No.27 (2001), p.3.

However, the term sustainability has become a contested concept. One of the first attempts by the dominant paradigm to appropriate the term was the Brundtland report which defined sustainable development as a development that “meets the needs of the present without compromising the ability of future generations to meet their own needs.”<sup>130</sup> This notion is essentially human-centred in that it focuses on meeting human needs, those at present as well as those in future, while ignoring the needs of other species and the Earth. Land and water, for example, are perceived as natural resources that need to be managed, while “a scientific assessment of land capacity” should determine land use.<sup>131</sup> Above all, the report advocates the need for future economic growth and although it mentions moral and ethical obligations, the conservation of “living natural resources” is advocated on the basis of an underlying “powerful economic rationale”.<sup>132</sup>

The Brundtland definition has been applied to the meaning that has been officially attached to the term *sustainable agriculture*. At the European level, the meaning of sustainable agriculture embraces a human-centred notion and attaches an instrumental value to the countryside. According to Fischler “[s]ustainable agriculture means ensuring that the benefits of natural resources and Europe’s unique environmental heritage are *available for future generations*.”<sup>133</sup> According to the European Commission, sustainable agriculture “would call for a management of

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<sup>130</sup> World Commission on Environment and Development, *Our Common Future*, chairman: Gro Harlem Brundtland (Oxford and New York: Oxford University Press, 1987), p.8.

<sup>131</sup> *Ibid.*, p.57.

<sup>132</sup> *Ibid.*, p.147.

<sup>133</sup> Quoted in Commission of the European Communities, *Commission Adopts a Communication on “Directions Towards Sustainable Agriculture”*, IP/99/48, 27 January 1999. [www.europe.eu.int](http://www.europe.eu.int). Emphasis added.

natural resources in a way which ensures that the *benefits* are also available in the future.”<sup>134</sup>

This contrast to the ecological approaches which embraces all of Nature, and not just the human species. Ecological sustainability attaches an intrinsic value to Nature which must be valued as such, and not just for its instrumental value attached to it by humans. Secondly, and most fundamentally, contrary to conventional approaches which aim at meeting human needs *indefinitely*, ecological sustainability questions the nature of those needs and above all is concerned about *how* these needs are being met. Again, as has been discussed before, ecologism seeks to meet human needs without causing harm to animals, other people or to Nature in general.

However, as in the above example on organic farming, the dominant agricultural paradigm has appropriated the term and attached a new meaning to sustainable agriculture that meets the criteria of its own hard core assumptions. In addition to the human-centric notion and the instrumental value it attaches to Nature, *economic* viability in terms of a neo-classical mechanistic economic framework, becomes of central importance. In order to be economically sustainable, a system must remain profitable or otherwise it will cease to be practised. Quotations from the Royal Agricultural Society illustrate this point:

- Unless farming is profitable, it is not sustainable, and it cannot sustain its functions of positive management of the environment, the landscape or the stewardship of the land and farm animals, in a way which either agriculture or society as a whole would wish.<sup>135</sup>
- Perhaps the greatest single threat to sustainability in the short run is that of the declining profitability of the farm sector.<sup>136</sup>

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<sup>134</sup> Communication from the Commission, *Directions Towards Sustainable Agriculture*, 1999, op. cit., note 88, p.3.

<sup>135</sup> RASE, *The State of Agriculture in the United Kingdom*, 1991, op. cit., note 100, p.10.

<sup>136</sup> *Ibid.* p.16, para.60.

- The principal concern in relation to the criteria of sustainability must lie in the area of the economic viability of U.K. agriculture. In Europe as a whole agriculture can only be sustained economically with fewer farmers.<sup>137</sup>

A similar point is made by the NFU who argued that “we consider that economic viability is a prerequisite for environmental sustainability.”<sup>138</sup> Equally, MAFF’s definition of sustainable agriculture makes no reference to organic or even environmentally friendly agricultural production methods. While being vague in general environmental terms of the meaning, it emphasises that the industry must remain competitive and thus economically viable:

- 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.<sup>139</sup>

It is this understanding of economic sustainability - the need to remain an industry, to maintain competitiveness and the need to produce for the global market - that is then used to de-legitimise the sustainability claims of ecological agricultural projects, as the following quotation will illustrate. Simon Fairlie’s Tinkers’ Bubble, a project that is built on *Permaculture* principles, was defined as *unsustainable* by John Gummer:

In May 1996, John Gummer managed to get permaculture – a term whose use is restricted by copyright – defined in a court of law as

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<sup>137</sup> Ibid., p.17, para.64.

<sup>138</sup> House of Commons, Agriculture Committee, *Environmentally Sensitive Areas and Other Schemes*, 1997, op. cit., note 69, vol.2, p.50.

<sup>139</sup> MAFF, *Towards Sustainable Agriculture: A Pilot Set of Indicators* (London: MAFF Publications, 2000), p.5. Emphasis added.

something which it isn't ... The main reason he gave for refusing planning permission was that the Bubblers were subsistence farmers, "...carrying out an experiment in living simply on the land and deriving a subsistence living from it, a pattern of living which is sometimes called 'permaculture'. *Any benefits of these aims to the wider economy would be negligible, since minimal agricultural and other produce would be available ... [I]nsofar as the appeal development may be sustainable, it could only be so for the occupants, and not in any wider sense. The issue therefore has negligible weight...*"<sup>140</sup>

In other words permaculture is not sustainable, Gummer argued, because it does not aim to produce a surplus. The alternative meaning of sustainability which permaculture embraces, namely that it seeks to create entire "systems that are ecologically-sound and economically viable, which provide for their own needs, do not exploit or pollute, and are therefore sustainable in the long term",<sup>141</sup> is thus not just denied reality but essentially neutralised. The dominant agricultural paradigm has appropriated the term and uses its own meaning to question the sustainability claims of ecological sustainable projects. To the dominant paradigm these ecological projects are void of meaning.

Furthermore, by denying reality to ecological projects and their meanings, reality to their perception of the countryside is also being denied. Planning laws that encapsulate conventional meanings of the countryside as the space of agriculture can then be applied to block the emergence and development of an alternative rural Britain. The perception of British agriculture is one of efficiency and productivity, as documented in chapter four. Small holdings, therefore, do not comply to this definition. Furthermore, they threaten and undermine the presentation of an

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<sup>140</sup> Simon Fairlie, 'Gummer Bursts Bubble', in *Permaculture Magazine*, No. 12 (August 1996), pp.19/20. Emphasis added.

<sup>141</sup> Graham Bell, *The Permaculture Way: Practical Steps to Create a Self-Sustaining World* (London: Thorsous, 1992), p.29.

agricultural productive countryside and must therefore be obstructed, as an example given by Fairlie, shows. Fairlie quotes a councillor of the Salisbury District Council – the council refused to give Jill Delaney permission to put up a shed for her free range chicken on landscape grounds because the site was on a flood plain “very visible from the A36” – as saying:

We must put a stop to these quasi-agricultural activities which are springing up all over the country’ ... What I mean by ‘quasi-agricultural’ is a mess of peasant farming, or subsistence farming, which already prevents the Common Agricultural Policy from working in Europe ... hobby farming is a thing of the past in the UK.<sup>142</sup>

In conclusion, what became apparent in these sections is that contrary to what Berger and Luckmann had argued, deviant ecological meanings are not translated into concepts derived from the modern industrial paradigm but instead, the dominant paradigm appropriates the very concepts of the alternative paradigm and attaches its own meaning to these. The result is that there are no longer any terms available which can express the ecological meaning. Ecological agriculture is deprived of its own unique identity. The meanings of *organic* and *sustainable* become normalised as defined by the dominant paradigm. The public accepts this form of definition and they can no longer see or imagine the alternative ecological version of an organic and sustainable farming practice because there are no concepts available with which to express the meaning behind these practices.

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<sup>142</sup> quoted in Simon Fairlie, ‘Zoning out the Peasants’, [www/oneworld.org.tlio/research/landessa.html](http://www.oneworld.org.tlio/research/landessa.html).

## 6.4. Conclusion

It has generally been acknowledged that the agri-environmental policy was driven by environmental organisations. The environmental movement was successful in changing agricultural policy, both at the national and European level, towards incorporating environmental concerns. The introduction of the agri-environmental schemes as well as the regulation on organic produce, is an example of the positive impact they have achieved, judged from a polity-oriented perspective. And yet, in this chapter I have also revealed that reforms introduced are only superficial and cosmetic in nature and serve to reinforce the very values, ideas and assumptions upon which modern industrial agriculture is built. Secondly, I showed that the new measures and the new interest groups incorporated into the dominant agriculture paradigm effectively serve to restrict ecological agriculture not only from providing a viable solution to agricultural problems but from becoming a creditable voice of opposition in the debate. The dominant agricultural paradigm was successful in maintaining continuity and in preserving the status quo despite the challenges it faced.

Crucial in reality-maintenance, it emerged, is the scientific truth regime. As part of the modern agricultural hard core, science has gained the status of ultimate 'truth' and functions as a tool in maintaining this particular paradigm. Science directs agricultural developments. It legitimises biotechnology precisely because it is informed by scientific advances. Because biotechnology is considered to be true and an inevitable result of progress, it is not up for debate. At the same time, science denies a voice to alternative knowledges. They are not to be taken seriously; they are marginalised for being eccentric and unpractical; they are organised out of the field of public perception. Effectively, science assists in side-lining uncomfortable critics and

in restricting the debate to issues that can be dealt with within the boundaries of the dominant paradigm. As a result, the room for manoeuvre for finding solutions and to dealing with the environmental problem caused by modern industrial agriculture is restricted. The debate is directed away from the scientific foundation of agriculture. Reforms introduced are only superficial or cosmetic because they deal with the consequences and negative side-effects of current agricultural practices. Reform takes the form of adjusting the protective belt. Since hard core assumptions themselves remain unquestioned, the causes of environmental degradation remain unexplored and unresolved.

Equally important to reality-maintenance, I revealed in this chapter, is the voluntary introduction of evolutionary change by key players within the modern industrial agriculture paradigm. The reform introduced did not change disciplinary boundaries nor did it result in a more inclusive approach to decision-making processes. Instead, ecological agricultural was not only denied reality, but their concepts were appropriated and incorporated into the dominant agricultural paradigm so as to reabsorb control. New meanings were attached to the concepts of organic and sustainable agriculture, meanings that confirmed the rationale of modern industrial agriculture. The knowledge of how to practise an official organic and sustainable agriculture differs fundamentally to the knowledge of how to practise an ecological organic and sustainable agriculture. These 'new' official meanings and concepts not only serve to confirm and reinforce the functioning and operation of existing agricultural production and distribution patterns but they also deprived ecological agriculture of their meanings, their identity. To the wider public, who has come to accept the official version of environmentalism and organic farming as the norm,

ecological agriculture becomes meaningless. Ecological agriculture can no longer be understood from the standpoint of the dominant paradigm because there are no terms to express the essence of its practices.

In this chapter I hope to have revealed that in assessing the impact of the green movement on agricultural practices, one has to look beyond what is going on within formal political processes. A focus on issues and actors in dispute cannot provide the whole picture since certain power relations operate outside the traditional political framework. It is not so much a question of which actor and what issue are incorporated in the political processes, but a question of whom do they serve and whom do they obstruct. The Soil Association, for example, gained acceptance as an official certifying body, and yet in its position it also assists in the exclusion of ecological food producers. It also contributes to the normalisation of the official meaning of organic farming and thus helps to neutralise the truly organic meaning to which its original founders had subscribed. The situation the Soil Association finds itself in thus illustrates the problems reform movements face. By accepting the core principles of the modern industrial paradigm, so as to be accepted and listened to, they reinforce and give legitimacy to this paradigm while also weakening the true ecological alternative.

In assessing the impact of the environmental movement on agriculture, the dominant paradigm's buffering mechanism has to be taken into consideration. In this chapter I illustrated that modern industrial agriculture was successful in keeping the ecological challenge at bay. Criticism based on magic, spirituality, inner life forces and intuition would have been brushed aside for being unscientific. Science thus exercised a form of power by forcing the alternative movement to use the scientific

discourse to prove its viability. As a result, vital resources, time and energy were allocated to carry out research to expose the myth of cheap food production, to show the danger genetically modified organisms pose to the environment, to prove that the dominant agricultural paradigm causes environmental destruction, that it kills off wildlife and that it is economically and socially unsustainable. Science successfully exercised a form of power that turned societal outsiders into societal insiders who gave in to this power and applied the scientific discourse so that their criticism is taken seriously. Yet by giving in to this power, these environmental agriculturists deprived ecological agriculture and its correlating knowledge system of the support and the resources it requires to build a viable alternative to the modern agricultural paradigm. Instead of developing and strengthening ecological projects, environmental agriculturists reinforced and gave legitimacy to a scientific agricultural paradigm that, at its core, seeks to control and dominate Nature. And while the opportunity was lost to announce and advertise ecological agriculture as a viable alternative, the reforms that were achieved were not only superficial in nature but served to sustain existing practices. So despite the fact that environmental concerns were incorporated into agriculture, ecological agriculture was the ultimate loser. Outside eco-networks, ecological projects have lost their meanings, their identity; they are denied reality. As such, they are defenceless and helplessly exposed to the rules and regulations of planning authorities and other similar institutions that present and seek to reinforce the dominant perception of agriculture and the countryside.