

Action plan to develop organic food and farming in England

**Department for Environment,
Food and Rural Affairs**

DEFRA
Department for
Environment,
Food & Rural Affairs

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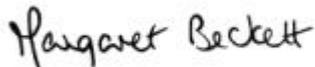
ACTION PLAN TO DEVELOP ORGANIC FOOD AND FARMING IN ENGLAND

Foreword by the Secretary of State

*In their report *Farming and Food: A Sustainable Future*, the Policy Commission led by Sir Don Curry recommended the development of a strategy for organic food production addressing all parts of the food chain. This Action Plan, which has been produced by a stakeholder group representing a wide range of interests, is a very important step towards such a strategy.*

Organic farming and food offer real benefits for the environment and many consumers value organic production methods and are prepared to pay a premium for food produced to organic standards. It has an important contribution to make, alongside other sustainable farming methods, to the future prosperity of our countryside and the choices available to consumers. I am delighted that the major retailers have committed themselves to working with the Organic Action Plan Group to ensure that our farmers can take advantage of the opportunities offered by rising consumer demand for organic food.

My Department is continuing to work closely with the farming and food chain as a whole to take forward development of the strategy for sustainable farming and food, to be published later this year.



Rt Hon Margaret Beckett MP

1. Introduction

1.1. This Action Plan aims to identify what is required to ensure stable and strategic growth for the organic sector. It sets out a series of practical measures which the Government and the food and farming industry will take to encourage a sustainable organic farming and food sector in England.

1.2. The Plan represents the first stage in a continuing strategy whose objectives are:

- to develop the organic sector in line with consumer demand
- to maintain consumer confidence in the integrity of organic food, and to ensure that consumers have access to accurate information about the standards to which it is produced
- to encourage all parts of the organic food chain to work in partnership
- to provide organic farmers, growers and processors in England with the market information they need to develop their businesses successfully
- to ensure that consumer demand for organic produce results in tangible benefits for the English countryside and English wildlife, by increasing British farmers' share of the organic food market.

1.3 The Organic Action Plan Group's objective is to promote the organic farming sector in England by encouraging our producers to supply a greater proportion of the organic primary produce consumed domestically. Currently they supply only around 30% of the market. This Action Plan, including the ongoing work listed at Section 5 below, is intended to help British producers to supply the organic market at least at similar levels to the conventional market, reflecting the varying trends in consumption and UK output. The UK conventional market share of indigenous produce in 2001 was 74.7% and DEFRA supports an objective for the UK organic market share to increase to at least 70%. Market share can vary for a variety of reasons including exchange rates which are outside the scope of this plan, and therefore this objective will be reviewed against the conventional market share figure on an annual basis.

1.4. The Government's Strategy for Sustainable Food and Farming, to be published later this year, will set out the policy framework within which the farming industry as a whole, including the organic sector, can develop sustainably. Further development of this Action Plan will take place in the context of that wider Strategy.

2. Rationale

2.1. The UK organic market has increased rapidly in recent years, with growth rates of 30% to 50% per annum. Sales in 2000/01 amounted to £802 million, up by 33% on the previous year. 2001/02 sales are predicted to be up a further 20%, to over £950 million. Despite the recent dramatic growth rates, organic still represents a small proportion of the total food sector, and many factors influence supply and demand. Predicting and managing growth in these conditions is difficult. A small increase in the number of producers in one sector can result in a significant increase in available organic product, leading to significant pressure on prices and loss of confidence by existing organic farmers and those considering conversion. If the organic sector is to develop sustainably, greater attention needs to be paid to demand-pull policies as well as to the supply-push policies designed to deliver agri-environmental outcomes which have characterised the UK policy approach to date. Successful implementation of a demand-pull approach cannot be achieved by Government action. It will require co-operation and partnership between all parts of the organic food chain. Approximately 80% of organic food sales take place through the multiple retailers, who are therefore key players in the future development of the sector. The rest is sold either through independent retailers or direct sales through organic farm shops, box schemes and farmers' markets. It is important to retain diversity in organic food retailing to maximise consumer choice and encourage a closer connection between producer and consumer, as well as promoting rural development.

2.2. Government financial support for organic farming is justified by the environmental public good which organic farming delivers, which extend to society as a whole and not just to the minority of consumers who choose to purchase organic food.

2.3. On the basis of comparing average conventional and organic farms, organic farming is generally accepted to produce the following environmental benefits:

- it results in

- higher levels of biodiversity;
- lower environmental pollution from pesticides;
- through lower use of energy inputs it contributes to reduction of carbon dioxide emissions
- because of reduced reliance on external materials it produces smaller quantities of controlled waste and so contributes to waste reduction.

2.4. Organic farming also produces social and economic benefits:

- organic food is produced to legally enforceable standards and is subject to tight controls on inputs and an official inspection and accreditation system; it therefore meets demands from an increasing number of consumers for high standards of assurance about production methods
- it can encourage consumers to take a closer interest in how land is farmed and, in the context of its particular contribution to local food marketing, can help to develop a sense of community between buyer and seller, town and country
- it requires high standards of animal welfare
- it benefits rural employment through the particular farming practices used and through development of new marketing systems.

2.5. The rationale which underpins the Action Plan is discussed in more detail in two papers prepared for the Action Plan Group: *England's Organic Sector: Prospects for Growth (Action Plan Group July 2002)* (available on the DEFRA website, <http://defraweb/farm/organic/actionplan.htm>) and *Organic Farming and the Environment (Action Plan Environment Subgroup, July 2002)* (Annex 3 to this Plan). The **economic evaluation of the Organic Farming Scheme** carried out in 2001/02 by the Department of Land Economy, University of Cambridge <http://defraweb/esg/economics/econeval/organic/index.htm> also forms part of the evidence base for the Action Plan.

3. The Organic Action Plan Group

3.1. The Organic Action Plan Group was set up following the Prime Minister's Seminar on Sustainable Food and Farming on 26 March 2002. It is chaired by Elliot Morley MP, Parliamentary Under Secretary of State for Environment Food and Rural Affairs. The terms of reference and membership of the Group are at Annex 1.

3.2. The Group's discussions took place in parallel with the consideration by Ministers of the responses to consultation on the recommendations of the quinquennial review of the UK Register of Organic Food Standards (UKROFS). The Action Plan takes account of Ministers' decisions on future arrangements for organic certification and control. A separate announcement will be made shortly on the detail of the new arrangements, including the way in which they will operate in Scotland, Wales and Northern Ireland.

4. Priority Action Points

4.1. The first priority area is to **maintain consumer confidence in the integrity of home-produced organic food through the continuing implementation of robust**

standards. This requires clarity about the standards which organic production has to meet, an effective, transparent and rigorous certification and control system, accurate and consistent information about what organic means, and improved understanding of the attitudes and motivations of consumers.

4.2. The following action points will help to address this area.

1. DEFRA will establish with effect from April 2003 a new Advisory Committee on Organic Food and Farming (replacing UKROFS) to advise Ministers on EC organic standards and their application in the UK, the approval of organic certifying bodies and the ongoing implementation of this Action Plan.

The new Advisory Committee will have a wider membership than the current UKROFS. In particular it will include representatives of the certifying bodies, organic sector bodies, all parts of the food chain and of wider consumer interests. It will liaise as necessary with all other relevant bodies.. In order to avoid conflicts of interests, detailed work on assessment of certifying bodies would be delegated to a certification committee which does not include representatives of the certifying bodies. DEFRA will take over the UKROFS responsibility for approving certifying bodies, acting on advice from the certification committee and will work with the devolved administrations to ensure that certification arrangements are appropriate across the UK.

2. DEFRA will publish, by April 2003, a new compendium of organic standards, based on the standards set out in EC Regulation 2092/91

DEFRA Ministers support high standards of organic production. It is however important to ensure that English farmers and growers are not disadvantaged in competition with organic producers in other Member States. In drawing up this compendium DEFRA will take account of the current UKROFS standards and will incorporate additions to the EU Regulation only where these are necessary to clarify what the standards mean in practice, or helpful to industry.

DEFRA, drawing on the advice of the new Advisory Body when it is set up and working with the certifying bodies, will seek to ensure that the EU organic standards continue to develop in line with consumers' expectations, reflecting the desire to have high standards in place and the need for integrity of the organic production process and the final product. To this end DEFRA will take forward the case for enhancing the EU standards where this is justified.

3. With effect from April 2003, all certifying bodies will be required to offer certification to the standards set out in the new compendium.

The purpose of this action point is to maintain the EU standards as the baseline for the organic sector in this country which helps to ensure that English farmers, growers and processors can compete on level terms with producers in other Member States. Certifying bodies will continue to be free to offer voluntary certification to their own additional standards if they so choose in order to maintain consumer choice as well as providing certification to the

baseline standards. The statutory approval and monitoring of certification bodies by DEFRA would relate only to their compliance with the baseline standards.

4. The new Advisory Committee, the certifying bodies, organic sector bodies and other food chain stakeholders will seek to increase consumer involvement in standard setting, and to increase provision of objective consumer information on production standards, production costs, and the benefits offered by organic farming.

In order to improve understanding of what research might better inform consumer choice, the Food Standards Agency will hold a workshop with organic interests, consumer organisations and other food chain stakeholders in November 2002. The output from the workshop, together with other relevant sources of information, will inform further consideration by FSA, DEFRA and the Action Plan Group of the need for more research relating to consumer choice.

4.3 The second priority area relates to **developing effective partnerships and improving performance throughout the food chain** in order to help the organic sector to develop in line with consumer demand. Action points 5 and 7 below are designed to improve the availability of information in the supply chain, thus achieving a better balance between supply and demand and helping to identify opportunities for British farmers, growers and processors. The remaining action points in this section aim to raise levels of performance throughout the organic food chain, thus helping the sector to meet consumer expectations.

5. The major multiple retailers have committed themselves to increasing the proportion of organic food which they source within the UK in product sectors where it is feasible for British producers to supply at acceptable levels of quality and price. In order to identify the scope for increasing opportunities for UK producers, the British Retail Consortium (BRC) will carry out a survey of major retailers during September 2002 comparing the proportion of UK produced organic primary products compared with the equivalent conventional product areas. The results of this survey will be made available to the Action Plan Group which will seek to agree by December 2002 with the retailers, collectively or individually which sectors offer British producers the best opportunities for meeting consumer demand. Once opportunities are identified, individual retailers will seek to support producers to increase their share of the organic market.

This is an important commitment by the multiple retailers. It will help organic processors and others in the food chain to estimate the likely UK market for organic produce, and will also help those involved to draw up good quality projects under the Processing and Marketing Grant and the Rural Enterprise Scheme, and thus gain access to Government funding.

DEFRA has made clear that in its view the British organic sector should be able to achieve at least comparable levels of market share to the equivalent

conventional product sector. There may be scope to be more ambitious in some sectors. The further work which the Action Plan Group plans to undertake with BRC and the major retailers in the last quarter of 2002 will establish the extent of the opportunities which exist in particular product sectors.

6. DEFRA will work with food chain stakeholders to develop a strategy for a healthy and buoyant regional food sector including local food marketing.

DEFRA welcomes the development of farmers' markets and has provided funding for their development through the Rural Enterprise Scheme and the Agricultural Development Scheme. Farmers' markets and other direct local and regional marketing of food account for a small but significant proportion of all organic food sales. Additional support might be available from bodies such as Food From Britain and the Regional Development Agencies.

7. DEFRA will work with the certification bodies, the BRC and other interests to collect, collate and publish sector by sector data on organic production, manufacturing, wholesale and retail marketing and consumer trends.

This action point complements the BRC survey (Action Point 5) and commits DEFRA to build on the work carried out for the Action Plan Group and on other activities such as the Soil Association's annual Food and Farming Report.

8. The Food Chain Centre will help to promote business performance in the organic sector through benchmarking and through value chain analysis, initially in the organic red meat sector.

The Food Chain Centre (FCC) will contribute to promoting business performance in all sectors, including the organic sector. It will promote techniques like benchmarking and value chain analysis and will work with different sectors beginning with red meat. The Centre will regularly consult organic sector bodies, will invite organic businesses to be involved in its detailed work, and will ensure that its results are widely communicated including to the organic sector.

Quality and environmental benchmarking are also important and these will be followed up separately by the Action Plan Group.

9. DEFRA will seek to secure amendments to the EC Rural Development Regulation to enable the Vocational Training Scheme to be used to raise skills levels in small organic food processing and manufacturing businesses.

At present the Vocational Training Scheme (VTS) is available only for projects aimed at beneficiaries who are involved in farming or forestry. Projects aimed at businesses whose core activity does not include farming or forestry are ineligible. There is a need to increase the number of small-scale

organic food manufacturing businesses and to assist them to acquire the skills necessary for organic certification. The Rural Development Regulation will need to be amended to allow VTS to be used for this purpose in the organic sector and more widely.

10. DEFRA will ensure that the pilot demonstration farm network to be established by end 2002 includes at least one organic farm in each of the parts of the pilot focussing on local benchmarking farms and centres of rural integration and excellence, subject to the farms concerned meeting the selection criteria for the project as a whole.

The pilot demonstration farms project aims to test the effectiveness of demonstration farms in improving the economic and environmental performance of farms and their integration into the food chain and the wider rural economy by building on the existing relevant networks of demonstration farms and other relevant initiatives. The project is in three parts: local benchmarking farms, linked to discussion groups to help drive up performance through knowledge sharing and consensus; a virtual pig demonstration farm; and demonstration farms as centres of rural integration and excellence, demonstrating and facilitating links to the consumer and to rural economies and communities. DEFRA will ensure that the agents who are appointed to set up the pilot scheme work closely with the existing networks run by Elm Farm and the Soil Association to ensure that the organic farms selected for the pilot help to fill gaps in existing regional coverage and enhance existing programmes. The case for further Government funding for organic demonstration farms will be considered when the pilot scheme is evaluated.

4.4. The third priority area relates to **public procurement**.

11. Following the recommendations of the Cross Government Sustainable Procurement Group this summer, the Government will take forward action to encourage sustainable procurement of food, including the role that procurement of organic food can play.

Following the EC Interpretive Communication on Environmental Considerations in Procurement, the Sustainable Procurement Group has clarified that UK public procurement rules already allow for contracting bodies to include in contract specifications requirements for foodstuffs to be organically grown on the basis of minimising environmental impacts of the production process, provided they have the resources to pay any premium and the specifications are non-discriminatory.

Care needs to be taken that in pursuing environmental requirements, contracting bodies achieve a balance with social and economic considerations and, in particular, do not inadvertently discriminate against local and UK producers. As part of this buyers should consider whether there are unnecessary restrictions in contract specifications which may currently act as a barrier and prevent small or local suppliers from competing on level terms.

In following up the recommendations of the Sustainable Procurement Group, it will be important for Government to focus on the areas where there is scope for the greatest impact. For some Departments, such as Department of Health and Ministry of Defence, food is purchased on a large scale and may have significant social, economic and environmental impacts, in the UK and beyond. DEFRA Ministers would like to consider with the major public purchasers whether, in order to reflect consumer preferences and to drive the sustainable development agenda forward across the whole of the food chain, there is scope for encouraging public bodies at least to mirror the retail level purchasing patterns of organic and other sustainably produced food. The information on consumer purchasing patterns obtained under Action Points 5 and 7 will help to inform further consideration of these issues.

DEFRA Ministers will also advocate sustainable procurement across Government as a whole through the Green Ministers network and will continue to liaise with local authorities, where some excellent initiatives are already under way.

12. DEFRA will work with its own catering contractors to increase the provision of organic meals and snacks in its staff canteens.

As part of the Department's own Strategy for Sustainable Development DEFRA Ministers are keen to encourage a wide range of food options to allow for consumer choice and promote the availability of sustainably produced food. DEFRA has therefore been discussing with its catering suppliers ways of increasing the availability of organic food in its staff restaurants and snack bars. As a first step, staff surveys will establish the extent of consumer demand for organic food and the caterers will be encouraged to run 'organic weeks' to stimulate interest among their customers. DEFRA will encourage other Departments to take similar initiatives.

4.5. The Action Plan Group regards **research and development** as a further priority area. DEFRA is reviewing its science strategy and budget allocations over the next few months and decisions on the future size of the dedicated organic programme will be taken towards the end of this year. DEFRA Ministers have confirmed that they consider the organic sector to be a high priority area for research spending. Pending decisions on the future budget, the following action points have been agreed by the Group.

13. DEFRA and the Action Plan Group will draw together information on the current levels of funding for research through all UK public sector, private and charitable sources. This will facilitate discussion of the scope for better targeting and co-ordination of the research effort and for a greater input from non-Government sources of funding.

14. The new Advisory Committee (Action Point 1) should have a Research Sub-Committee which will bring together key stakeholders including research funders to ensure identification and co-ordinated

implementation of the research and technology transfer necessary to help achieve the objectives of this Action Plan.

15. In response to the Action Plan Group's recommendation that the organic sector should have a stronger influence on the organic farming R&D agenda and to help ensure that the industry's most pressing needs are met, DEFRA has decided to set aside £5m over the 5 years beginning in 2003/04 for the purpose of providing a grant to industry to support its research priorities through the LINK programme.

4.6. The fifth priority area is the **payments offered to organic farmers from public funds**. The Action Plan Group is clear that the justification for offering payments to organic farmers during and after conversion relates to the environmental public goods supplied by organic production methods. There is evidence that the Organic Farming Scheme as currently structured is not attracting sufficient new entrants to meet the England Rural Development Programme target of an additional 45,000 ha of land (650 farmers) in England entering conversion each year until 2006. The ERDP target represents a threefold increase in the area of organically farmed land in England over the period of the ERDP (2000 to 2006) and would result in 430,000 ha being managed organically. Even more worryingly there is some recent evidence that some organic farmers are reverting or considering reverting to conventional production.

4.7. The action points on developing more effective partnerships in the food chain are designed to help stabilise the organic market and to increase farmers' confidence in the future prospects for organic production. However there is a need for a clear signal that Government is committed to a successful long-term future for organic farming in England. To this end the following Action Points have been agreed subject to obtaining the necessary EU approvals.

16. The Organic Farming Scheme (OFS) will be amended, as an interim measure, to allow farmers who have completed conversion to enter into new 5 year agreements requiring them to observe the environmental conditions of the Scheme and entitling them in return to payments at the following rates: arable land £30/ha, other improved land £23/ha, unimproved grassland £5/ha.

17. The conversion aid for top fruit production under the OFS will be increased to £600 per hectare for Years 1 to 3 and £30/ha in years 4 to 10 in order to help English growers to respond to consumer demand for organically produced fruit and thereby contribute to the Government target of increasing fruit and vegetable consumption.

18. For the longer term support for organic farming will be delivered through a specific strand in the new structure of agri-environment schemes to be developed over the period 2002 to 2004. The organic strand will be designed to reflect and reward the environmental public goods delivered by organic production methods.

DEFRA will seek approval from the European Commission for the interim changes to the OFS (points 16 and 17) to be made in time for the 2003 scheme year. DEFRA will also set up in August 2002 an organic farming stakeholder working group to develop the specific organic farming strand of the new agri-environment scheme structure, within the framework of the Review of Agri-Environment Schemes.

5. Areas for further work

5.1. Further work will be needed on many of the Action Points listed in Section 4, and that section indicates how these issues will be taken forward. However there are a number of other areas where the Action Plan Group has identified a need for changes or new initiatives to help the organic sector to develop. **Annex 2** to this Action Plan contains a consolidated list of the Group's recommendations and identifies the extent to which they are reflected in the Action Points set out in this Plan. This consolidated list will form the basis of the Group's work over the next few months.

5.2. Many of the issues which are holding back development in the organic sector are similar or identical to problems affecting other sectors of the farming and food industry and where DEFRA and food chain stakeholders are already undertaking a significant programme of work. The areas concerned include

- work to encourage co-operation and collaboration by farmers
- reviews of access to skills training in rural areas and of advice to farmers and land managers
- work on food processing issues such as the role of small and medium abattoirs in the red meat chain
- work on helping farmers and rural businesses to gain access to the ERDP project-based grant schemes
- work to promote exports of British food through Food From Britain
- work to encourage improvements in the national diet, in particular through higher levels of consumption of fruit and vegetables.

5.3. It will be important to ensure that the needs of the organic sector are taken into account in all these areas.

19. The secretary to the Action Plan Group will keep in close touch with other workstreams in Government to ensure that the recommendations from the Group are taken into account as the Strategy for Sustainable Food and Farming is developed.

5.4. It will also be important to monitor the extent to which the organic sector is successful in gaining access to Government funding under the ERDP and other sources of Government funding for development projects.

20. DEFRA will report to the Action Plan Group on the success rate for organic applications under ERDP and other grant schemes administered by the Department and will provide a general analysis of the reasons for rejection where applications are not successful.

This will enable the Action Plan Group to consider whether any further action is needed to assist the organic sector to make best use of the opportunities available under these competitive schemes.

5.5 The Action Plan Group will continue to meet until the end of 2002/03 when responsibility for overseeing the implementation and further development of the strategy for a sustainable organic food and farming sector in England will pass to the new Advisory Committee

21. The Action Plan Group and the Advisory Committee will draw up and publish detailed criteria for measuring the success of the strategy for developing a sustainable organic food and farming sector in England, including an assessment, for key product sectors, of the potential for closing the gap between the organic and conventional market shares, and will put in place arrangements for monitoring and reviewing progress.

**Organic Action Plan Group
July 2002.**

**TERMS OF REFERENCE AND MEMBERSHIP OF ORGANIC
FARMING AND FOOD ACTION PLAN TEAM**

Terms of reference

"To advise the Government, by the end of July 2002, on how we can create a sustainable and competitive organic food and farming sector by -

- Identifying ways of achieving sustainable growth in organic farming and food processing
- Increasing our share of the market for organic produce
- Identifying measures required in the distribution, processing and retailing sectors to promote growth in the organic sector overall."

Membership

Elliot Morley (Organic Farming Minister)	Chairman
Peter Melchett	Soil Association
Lawrence Woodward	Elm Farm Research Centre
Dominic Dyer	Food and Drink Federation
Catherine Fookes	Sustain
Robert Duxbury	UKROFS and British Retail Consortium
Peter Whitehead	IGD
Tim Lang	Centre for Food Policy
Hannah Bartram	RSPB
Oliver Dowding	NFU
Oliver Harwood	CLA
Julian Wade	Organic Food Federation
Christopher Stopes	Organic Consultant and UKROFS
Nic Lampkin	Organic Centre, Wales
	Officials
Jane Brown	DEFRA
Peter Costigan	DEFRA
Roger Unwin	DEFRA
Dave Russell	DEFRA
Callton Young	DEFRA
John Parkin	DEFRA
Jo Key	No 10, Agriculture Unit

CONSOLIDATED LIST OF ACTION PLAN GROUP'S RECOMMENDATIONS

This list is a summary of more than one hundred detailed recommendations that the Action Plan Team drew up. It identifies how they relate to the Action Points in the Plan. The Action Plan Team and the Advisory Committee on Organic Food and Farming, that will replace UKROFS in April 2003, will continue to develop the strategy for a sustainable organic food and farming sector, taking forward work in this area against the background of the the Sustainable Food and Farming Strategy to be published later this year.

Recommendation	Covered by Action Plan Recommendation number
<u>General</u>	
Action plan to be produced and group established to monitor its implementation	1
<u>Farmers and Support</u>	
Ongoing organic stewardship payments to be provided	16, 18
Support for top fruit to be introduced	17
Cooperatives should be developed and encouraged	20
Production costs should be benchmarked	7, 21
Sale of UK farmed organic produce should be encouraged	5
Organic feed and seed production should be developed	1
Encouragement should be given for grants for cooperatives, marketing and on farm processing	20
Grants for livestock and arable farms should be considered to assist with conversion costs.	19
<u>R&D and Demonstration Farms</u>	
More funds should be allocated to organic R&D	15
A new organic research review body should be established	14
Priority areas for R&D to be identified in light of plan	14

<ul style="list-style-type: none"> • Priorities for the organic industry include environment, animal health, best practice, taste, evaluating sustainability of local supply chains, texture, quality, seed and processing and appropriate benchmarking • Priorities for consumer and health include nutrition and health benefits 	14 To be discussed in FSA Workshop (see para 4.2)
Existing network of demonstration farms to be developed and expanded and new ones added as appropriate	10
R&D contracts to include clear strategy for technology transfer	14
<u>Training and Business Advice</u>	
More business advice should be available under OCIS	19
Financial and market data should be collected and circulated	7
Uptake of grants by organic units should be evaluated	20
Conversion grants should be subject to attending training courses	19
An institute of Organic Advisers should be established	19
Marketing should be added to the training packages provided for organic farmers	19
<u>Supply, Processing and Marketing</u>	
A forum to enable growers, retailer and marketing organisations to discuss the market and forecasts should be established	5
Food Chain Centre should promote efficiency in the organic sector	8
Small scale abattoirs should be encouraged	19
Acceptable processing standards should be developed	1
Target grants at small processing units	20
Provide training to raise expertise in processing particularly for SMEs	9
Information on processing and marketing should be provided	7

Box schemes, farmers markets and farm shops to be supported by RES	6
Review EU grading standards for fruit and vegetables	1
Promote regional food initiatives	6
Food miles issues need to be considered	19

Retailing

Retailers should be encouraged to purchase UK organic produce	5
Retailers should develop their contacts and involvement with primary organic producers	5

Certification

A viable and dynamic successor to UKROFS should be established	1
Certification import and derogation procedures should be simplified	2
Standards should be developed in line with consumer expectation	2
Organic poultry, pullet and day old chick standards need clarification	2

Social and Institutional

Information should be provided to consumers and retailers on costs of organic production	7
Data on consumer trends in organic purchasing should be collated	7
Public purchasing of organic food should be encouraged and appropriate guidance drawn up	11, 12
Liaison between Government Departments on organic issues should be encouraged	19
Government literature should be reviewed to ensure appropriate references are made to organic food and farming	19
Consumer involvement and awareness of organic issues should be increased	4, 7

ORGANIC FARMING AND THE ENVIRONMENT

Introduction

1. This paper was prepared by a Subgroup of the Action Plan for Organic Farming. Its purpose is to summarise the Subgroup's views of the likely comparative effects of organic and conventional farming on the environment.

General considerations

2. There are a number of inherent difficulties in comparing one system of agriculture with another. These include:

- **Basis of comparison:** One issue is how to take account of the lower yield potential of organic systems. Should environmental impact be measured per unit of land area, per unit of economic activity or per unit of produce?
- **Type of farms compared:** Most comparative trials have compared lowland mixed crop and livestock organic farms with similarly structured conventional farms, and do not include comparisons with the most intensive conventional farms. There are also few comparisons between organic and conventional extensive farms.
- **Lack of clear definition of what is meant by “conventional” agriculture.** Whereas organic agriculture is defined in EU and Sector Body standards, there is no similar definition for what is meant by conventional agriculture, and practices in both systems will change over time especially in relation to market signals.

Assessing existing differences versus predicting future change

3. There are a number of reasons why future effects may be different from existing differences. These include:

- The effects of scale of converted areas are unknown. Larger areas of contiguous organically farmed land could result in greater or, possibly, lesser environmental benefits than the conversion of individual farms.
- The implications at the macro-scale if a large proportion of agricultural land was converted to organic. Organic systems tend to produce lower yields than conventional systems, and have a higher proportion of land occupied by animals, whereas many conventional livestock systems have a greater reliance on feed produced off-farm. This could lead to differences in food imports and in the balance of land-use within the country. It is not clear what the implication of these macro changes would be for the environment.

Environmental impacts

4. **Biodiversity:** Comparative reviews of the evidence base have been conducted for MAFF, English Nature, The European Commission and the Soil Association. The general conclusion is that on average there is a positive benefit to wildlife conservation on organic farms. In most studies organic agriculture provides a conservation benefit, whereas there are few studies where a disbenefit is shown.

I Some of the potential causes for the biodiversity benefits of organic farming include: Organic standards **require** the sympathetic management of wildlife rich infrastructure features, such as hedges, and ditches. These features also play a role for the organic farmer, providing reservoirs for the predators of

- crop pests as part of the integrated pest control strategies practiced on organic farms.
- II A higher proportion of organic lowland farms are in **mixed farming**.
 - III Use of synthetic fertilisers, agrochemicals and veterinary medicines is prohibited or much restricted, which removes direct and indirect problems for wildlife.
 - IV Greater variety of crop structure because of more spring cropping in more varied rotations.
 - V Organic farms often use **undersowing**, such as with stubble turnips with the land then used for autumn grazing. This can produce attractive over-winter habitat for seed eating birds and helps boost populations of some farmland invertebrates.
 - VI Existing **unimproved grassland** is protected under organic standards (although legislation on Environmental Impact Assessment gives protection to uncultivated land generally).
 - VII **Stocking densities** are limited by productive capacity underpinned by the Organic Standards and so tend to be lower in organic systems. The lower density can be an advantage when grazing sensitive habitats. Different species of livestock are more often maintained on organic farms. This helps to control parasite burdens and has advantages in maintaining structurally diverse swards.

While some of these practices are used on some conventional farms it is only generally on organic farms where most of the relevant management is routinely and systematically carried out. Although, the evidence from several studies shows that birds do better on organic farms overall, there are some detrimental actions in organic farming, such as mechanical weeding or mulching operations taking place between April and July. If these practices were to intensify in the future they could reduce the overall benefits for ground-nesting birds. Both organic and conventional farms will perform better when under agri-environmental schemes.

5. **Nitrate loss:** Many organic systems operate at a lower level of nitrogen intensity than conventional systems, with nitrogen inputs from fixation by legumes, or from importation of animal feed onto the farm. MAFF research compared the losses reported in a study of 3 organic farms over a 3 year period with a database of losses from conventional farms within Nitrate Sensitive Areas over the same period. The more extreme NSA treatments (the use of cover crops and the conversion of land use to extensive grassland) were excluded from the comparison. The results showed that overall losses of nitrate from the organic systems studied were smaller than from the conventional systems when comparing all sites. They were similar to the conventional systems if grass sites receiving more than 200 kg/ha fertiliser N were excluded. The range of losses from site to site was large, which meant that the comparison between different systems was relatively insensitive. The variability indicates that there is considerable scope for further reduction in losses with both systems. Within organic systems, the greatest benefit would come from controlling losses during the transition from clover-grass ley to arable.

6. **Phosphorus loss:** The main loss pathway for phosphorus is by movement of soil particles. Leaching is a smaller and more site-limited effect. There are some additional “incidental” losses following the application of fertilisers or manures.

There is no direct evidence of differences in phosphorus losses between organic and conventional agriculture. (See also comments on Soil Protection, below)

7. **Pesticide pollution to water and air:** Pesticide use in organic farming is very restricted. A small number of pesticides are approved for organic use (principally copper, sulphur, natural pyrethroids, and derris), but they tend to be used as a last resort and the last two are either only permitted for use in protected cropping or for a restricted range of horticultural crops. With the exception of sulphur on certain top fruit crops and pyrethroid sheep dip (which is used in the same way on both organic and conventional farms), the use of the restricted range of pesticides is very limited by comparison with conventional agriculture. In particular, organic farmers do not use herbicides, some of which (such as isoproturon) have presented particular water pollution problems. Pesticide pollution from organic farming will be far less common than pesticide pollution from conventional agriculture. These differences are likely to hold whether assessed per area, or per unit of food produced.

8. **Energy efficiency:** MAFF funded a desk-study on energy costs in organic systems. Organic systems had a lower energy input largely because of an absence of indirect energy inputs in the form of nitrogen fertiliser. The greater energy requirement for conventional crops holds on an area and yield related basis except in the case of organic carrots. Organic lowland livestock systems tend to have lower energy use than conventional. For extensive upland livestock systems, the energy uses are more similar, although on average organic production uses somewhat less. Some of the differences in energy ratio were large. Organic arable production used 35% and organic dairy 74% less energy than conventional per unit of product.

9. **Soil protection:** There is little UK evidence on the relative benefits of organic or conventional systems for soil protection. Such studies as have been done and those from other countries tend to show benefits for organic systems. Organic farmers pay particular attention to their soils, and it is a fundamental tenet of organic farming to operate a sound rotational system to “feed the soil” to maintain organic matter content and to keep it in good condition. However the return of organic matter may not be much different to a high yielding conventional system. The control of weeds by cultivation, which is more frequent in organic systems, may increase infiltration of rainwater which would reduce run-off and soil loss, or it may result in greater oxidation of soil organic matter and greater risk of soil loss by wind and water erosion. Studies into the microbial response of soils to organic management indicate there are benefits in many but not all situations and not always in all the attributes measured. The absence of soluble nutrients, most pesticides and reduced use of veterinary medicines such as antibiotics and ivermectins can be expected to benefit soil organisms.

10. **Carbon dioxide:** Net emissions of carbon dioxide from agriculture depend upon use of fossil fuel and the amount of carbon sequestration in soil organic matter. Emission from fossil fuel use will be lower on a per area and a per yield basis, reflecting the greater energy efficiency of organic agriculture noted above. There is insufficient evidence on whether there is a significant difference in the amounts of carbon sequestered in soils.

11. **Ammonia:** Ammonia is mainly lost from the surface of manures, either from animal buildings or hardstandings, which are soiled by manures, or during storage and handling. Manures produced in organic systems often have a lower concentration of nitrogen than do conventionally produced manures. Organic systems encourage the composting of manures, which leads to a relatively high loss of ammonia, although this will reduce the amount emitted when the compost is subsequently spread. Given the constraints on housing and stocking rate it is not possible to have intensive pig and poultry organic units, which are a major source of ammonia from conventional systems. Organic pigs and poultry will have similar losses to conventional outdoor units. It seems likely that on balance there is little difference between organic and conventional systems in the amount of ammonia which is lost from the system per unit of yield, but it is likely that emissions are lower per unit area. Given that nitrogen is more valuable to organic systems than it is to conventional systems (which can purchase nitrogen fertiliser at about 30p per kilogram), there should be a greater incentive for organic farmers to control ammonia losses in the future.

12. **Nitrous Oxide:** Nitrous oxide is emitted from manures and from soils. Emission tends to occur intermittently when there is a combination of the appropriate conditions. Within conventional agriculture, the main risks arise from manures and from the waterlogging of soils by heavy rainfall following fertiliser application. Within organic farming the risks are likely to come from manures and from waterlogging of soils where there is a legume crop. In the absence of direct measurement, it is not possible to assess whether there is any difference in risk from organic or conventional production.

13. **Methane:** About 75% of methane on farms is emitted directly from ruminant animals (chiefly cattle and sheep). There have been no direct comparisons of methane generation between organic and conventional production. Different types of fodder will generate different amounts of methane, with higher rates released from diets which are high in roughage relative to diets high in starch. This will tend to result in higher emissions from organic systems, as organic diets tend to be high in roughage and low in concentrates. Methane emission per unit of livestock product decreases as the intensity of animal production increases (two cows producing 5,000l of milk will generate more methane than one cow producing 10,000l of milk). On average, production intensity is lower in organic than conventional systems, so methane generation from organic farms is likely to be greater per unit of food produced. Because of the lower stocking densities, it may be similar on an area basis.

14 **Controlled Wastes:** Waste is generally lower in organic farming since the system relies less on external inputs. Packaging materials for agrochemicals, veterinary medicine, animal feed, and fertilisers should all be lower on organic holdings. There is also little need for disposal of pesticide washings on organic systems.

15. **Human Pathogens:** Pathogenic organisms from livestock can contaminate surface waters used for drinking, bathing or irrigation. There is no reliable information on any differences in the incidence of zoonoses between organic and conventional farms although there is on-going research. Studies have shown that composting manures and treating slurries as encouraged under organic standards

decrease the survival of any pathogenic organisms but stacking or long term storage can also be beneficial. The methods of handling manures between farming systems may not be sufficiently different to produce a consistent effect and therefore information on the incidence the organisms is needed before any conclusions can be drawn.

Conclusion

16. The analysis can be summarised as follows:

Biodiversity	On average organic is better
Nutrient pollution to water	Available information is limited, but losses of nitrate from organic systems are similar on an area basis to losses from conventional systems subject to limits on quantity and timing of fertiliser and manures.
Pesticide pollution	Organic is better
Energy efficiency	Organic is usually better
Soil protection	On balance organic has benefits for soil organisms although little difference has been shown for physical effects.
Carbon dioxide	Organic is better because of reduced energy use.
Ammonia	Little difference per unit yield, but probably lower emissions from organic per unit area
Nitrous oxide	Insufficient information
Methane	Conventional is probably better per unit of output, but may be similar on an area basis
Controlled Wastes	Organic is better
Pathogens	No information – subject to ongoing research

17. In all cases (apart perhaps from pesticide pollution), it is important to recognise that the differences relate to an average farm. Individual farm management and farmer motivation will have a significant effect on environmental impacts regardless of the farming system.

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