

## **UK organic research funding – scope and aims**

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### **INTRODUCTION**

Government has funded research on organic production since 1991, as one of a number of measures to promote organic production. The purpose of this paper is to outline the development of the research programme, describing its rationale and objectives, and providing an indication of likely future priorities. In the main the text will relate to the DEFRA (and previous MAFF) Programme, but will also mention the research funded by the Research Councils and by the Scottish Executive.

### **Historical development of the Programme**

The DEFRA Programme (which covers the research needs of England and Wales) started in 1991 with an annual budget of about £440k. Over the last decade the level of spend has increased 5fold, and currently stands at around £2.1 million per annum (Figure 1). Throughout this period, the Programme has been funded by the Organic Farming Unit within MAFF, and now DEFRA, in support of the Organic Aid Scheme and the Organic Farming Scheme. From the outset the programme had a broad set of objectives. There are 4 scientific Objectives:

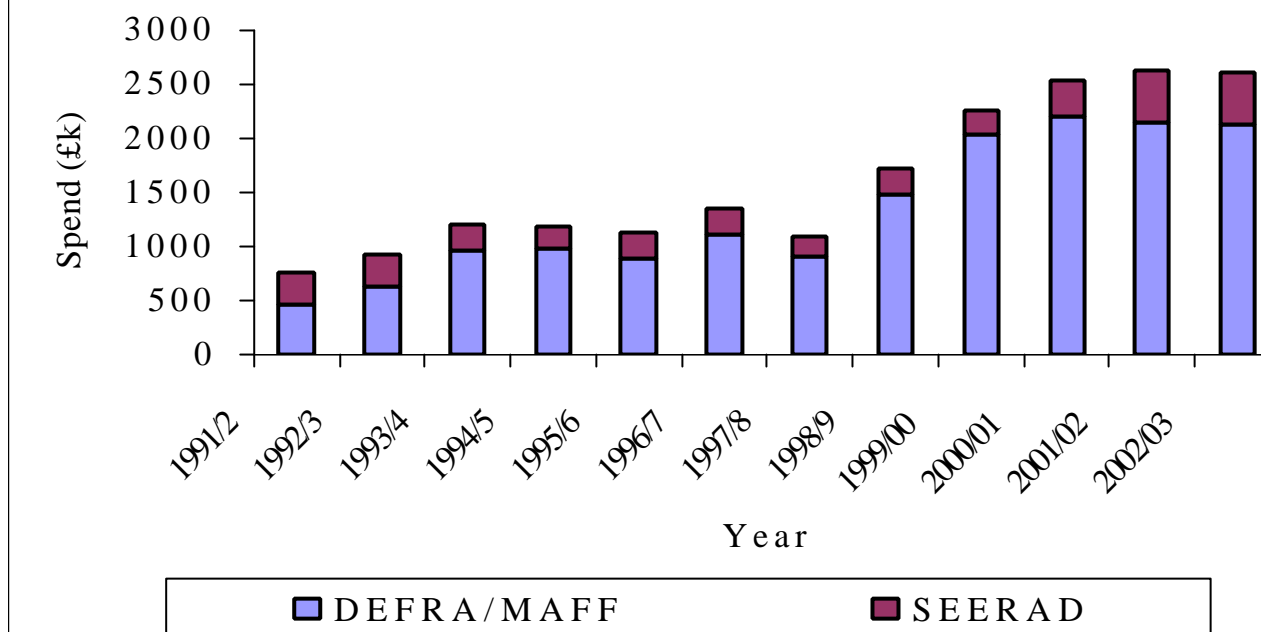
- To assess the economic implications of converting to organic production;
- To compare the environmental effects of organic farming compared to other types of agriculture;
- To relieve constraints to organic production, so as to make organic farming more attractive, and commercially viable;
- To ensure that technology transfer is maximised

Since the start of the programme nearly 100 projects have been funded at a total cost of £13.5 million.

The Scottish Executive Environment & Rural Affairs Department (SEERAD) has also funded research on organic farming and co-ordinates its activity with DEFRA. The programme includes work on nutrient cycling, pests and disease, environmental impact, animal welfare and crop management in organic systems, and on economics and organic markets in Scotland. In addition, there is a body of SEERAD research relating to sustainable agriculture, which will also underpin organic farming. SEERAD's Research expenditure on organic farming has more than doubled over the last two years to around £480k per annum in 2001/2.

In addition a small number of separate projects have been funded by the Research Councils.

**Figure 1 Development of DEFRA/MAFF and SEERAD Organic Farming Research**



Research Strategies for the programme have been published since 1991, and the programme has been reviewed several times. The most significant reviews were those conducted in 1998 and 2001. At each of these reviews, comments from the industry, researchers and independent experts were requested. The research priorities identified by UKROFS (most recently in UKROFS, 1998) have been particularly helpful in directing research.

In addition, a great deal of other agricultural research is relevant to organic farming. DEFRA has funded significant research programmes on biological control of pests and diseases, mechanical weed control, optimisation of the use of animal manures, and varietal development, as well as more generic areas of research which are relevant to all farmers, such as research on conservation, animal health and welfare, and control of vertebrate pests.

### **Research infrastructure and contractual arrangements**

A critical factor in the development of the research programme has been the availability of a research infrastructure capable of conducting the relevant research. One of the key tenets of organic farming is that farming should be considered as an holistic process. From the outset, an important facet of the Programme has been that research should wherever possible be conducted on organically registered land. In addition, the researchers involved need to be familiar with organic systems and able to manage the research in a way which is sympathetic with organic principles. These constraints have limited the range of contractors who are involved in the Programme, although currently there are 16 different contractor organisations involved in different contracts. Some of the

projects have involved the investigation of the conversion process, and this has helped to create a valuable resource of organically registered land associated with research institutes.

DEFRA's research projects are let by a number of mechanisms:

- Open Competition, in which a specification is published and bids are invited. The bid offering the best value for money is then funded.
- Negotiated projects, in which a specific contractor is requested to submit a proposal to address a particular specification.
- Concept Notes, in which contractors suggest specific pieces of research to DEFRA, and DEFRA agrees that the work should be funded.
- LINK, in which projects are co-funded by Government and the industry. There are a number of LINK Programmes, each managed by a Programme Management Committee. So far, only one organic farming project has been let through the LINK route.

Between the Reviews of 1998 and 2001, some 47 projects were let within the Programme. Of these, 44% of the value was placed by Open Competition, 3% by LINK, and about 10% by unsolicited Concept Notes. Of the rest, 23% was accounted for by research continuing or related to the programme system studies. The remaining work was placed by negotiation with appropriate contractors. In the future, it is expected that the proportion of research let by open competition will increase.

### **Significant research areas and outputs from the Programme**

The programme is very wide ranging. It has produced useful outputs providing information on the economic performance of organic farms, and the costs of conversion. System studies on dairy, stockless arable, field vegetables, upland beef and sheep, pig production and poultry production have contributed to an understanding of the constraints to organic production and how these are best overcome.

Research on environmental topics has helped to underpin the development of the Government's policy towards organic farming. The research has demonstrated benefits from organic production in terms of biodiversity and energy use. Research has also shown that organic farming is not necessarily much better than conventional agriculture in terms of nitrate loss. Two small projects have been funded which address the implications for organic farming of the introduction of genetically modified crops.

Projects focusing on animal health and welfare contribute to an improved understanding of practices within organic systems. This has helped to provide improved guidelines to organic producers and their advisers, in the form of a computer based compendium of animal health and welfare issues.

A large project has recently been completed on the status of phosphorus and potassium nutrition in organic systems, and a project has also been funded to investigate the fertility of soils used for organic production.

Further examples of knowledge transfer include the production of booklets on manure management, strawberry and apple production, a compendium of organic research conducted across Europe, a CD-Rom with information on organic research publications, which is about to appear is the Org-Plan Conversion advisory package and many Open-days and demonstrations to organic farmers. One key output which will assist advisors in exploring practical scenarios with farmers considering organic conversion.

### **Outcome of the 2001 Organic R&D Review**

DEFRA's Organic Farming (OF) Research Programme was reviewed in July 2001 with the following conclusions:

- The future level of funding will be considered in a research prioritisation exercise which is looking across all of DEFRA's science programmes.
- The creation of DEFRA increases the emphasis towards assessing and improving the sustainability of organic farming, including environmental, social, and production aspects.
- Of the emerging issues relating to the quality of organic food, none fall directly within the OF Programme. Research is more for the FSA, the industry itself, retailers, or Trading Standards authorities.
- Future research on organic protected cropping would have a relatively low priority for the OF Programme because of the high cost of the research and the likely limited environmental benefits. Other funding sources such as the HDC, or industry itself, may be more appropriate for this sector.
- Research designed to overcome problems arising from the use of inappropriate rotations or cultural principles will not be accorded high priority.
- About 35% of the Programme is devoted to large-scale system studies, and associated projects. Whilst accepting their importance, future funding will consider various options to maximise their value whilst reducing costs. There is a continuing need to fund research on animal health and welfare including homeopathy.
- Farmer participation in the OF Programme is higher than in many other agricultural research programmes. However, farmers will be encouraged to become involved in further participatory research to be let via open competition.
- The previous policy of not directly funding the development of pest and disease resistance should be continued, unless there is a particularly strong case. Instead, resources will be focused on the practical application of breeding material developed in other programmes.
- The main rationale for government support of organic farming is to obtain environmental benefits. Further information is required on: aspects of nutrient and gaseous pollution; impacts on soils; impacts of particular sectors of organic production (such as upland production); and more assessments of multiple environmental impacts within the same system.
- On the biodiversity side, there is a need to take a more analytical or modelling based approach, rather than relying always on direct experimental observation. As organic farming expands, assessments will need to take account of the arrangement and density of organic farms within the landscape, rather than relying on measurements from individual farms.

- There are a number of issues relating to sustainability which should be considered, including: energy use, food miles, rural economy issues, nutrient supply, potential impact of climate change .
- Weed control continues to be a significant problem for farmers and a constraint to wider uptake of organic farming. This will remain an area of high priority for the Programme.
- There is a continuing need to monitor the economic effects of organic farming in comparison with conventional, including research on the viability of organic farming with different levels of price premia, and an assessment of the contribution of organic farming to the rural economy.
- Knowledge transfer has always been a high priority within the Programme, and will remain so.
- About 200 Concept Notes were received after the review, requesting a total spend of nearly £30 million. A relatively small proportion of these can be funded, with the main part of the future work being let by Open Competition.

### **Future development of the Programme**

DEFRA has proposed the development of an Action Plan for Organic Food and Farming. It is possible that the Action Plan will make recommendations on the future scope or direction of DEFRA's research programme. Any recommendations will be carefully considered in setting future priorities for the programme. The Policy Commission on Farming and Food has already made recommendations relevant to organic farming and to the way in which agricultural research should be managed in the future.

### **CONCLUSIONS**

There is a significant programme of government-funded research on organic farming. It has been influential in informing policy, and in providing useful information to organic farmers or those contemplating conversion. Knowledge transfer and involvement of the organic farming industry has been a key issue in the programme up to now, and this is likely to continue into the future. There may be further implications arising from the report of the Policy Commission on Food and Farming, and from the proposed Action Plan on Organic Food and Farming.

### **REFERENCES**

UKROFS (1998) United Kingdom Register of Organic Food Standards, List of research and development priorities for organic production.

Details of ongoing research projects and of research results and reports are available on the DEFRA Website at <http://www.defra.gov.uk/research/researchfrm.htm>.

From: Powell et al. (eds), *UK Organic Research 2002: Proceedings of the COR Conference, 26-28<sup>th</sup> March 2002, Aberystwyth*, pp. 1-5.