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AND SO THE NEW REGIME BEGINS

Not with a bang - although more than a whimper: definitely muted though. The launch of the new Environmental Stewardship Scheme was a quiet, rather sombre affair. It crossed my mind that the launch party for one of TS Eliot's poem's might have had the same atmosphere. In fact his lines kept coming to mind - "*We are the hollow men*".

However, Defra's booklets and explanatory material looked good - some excellent drawings and pictures - and the content isn't to be sniffed at; £60 per ha under the Organic Entry Level Scheme and the chance of more under the Higher Level Scheme is very welcome. We had to hang around for ages but there was some decent display material and plenty of tea and biscuits - "*We are the stuffed men*" - before being led into another room.

A few of agriculture's great and good were on a platform - "*Leaning together Headpiece filled with straw*". Margaret Beckett spoke and then left. I didn't blame her, the thought crossed my mind. Don Curry was next, hailed as the guiding light - "*Shape without form, shade without colour, Paralysed force, gesture without motion*".

His famed report did not convince me and was too readily accepted - "*The hope only Of empty men*". Still the ESS has merit though not enough money - "*Between the motion And the act*". Curry speaks and unease mounts, then he says it: "a sustainable agriculture and competitive on the world market" - "*Between the idea And the reality Falls the Shadow*".

The others line up to follow the leader - "*Here we go round the prickly pear*". I decide to follow Margaret and leave full of grim thoughts - "*this last of meeting places*" where "*Lips that would kiss Form prayers to broken stone*" and of agriculture's future. Another of Eliot's poems forces itself on me - "The Waste Land".

T S Eliot (1925) The Hollow Men - website link
http://www.cs.umbc.edu?~evans/hollow.html

In this issue

Food Miles

Food miles has once again become a topical issue. Three events in recent weeks have highlighted the problems associated with a food system that is based on global sourcing and complicated, transport-intensive supply chains.

The first has been described as the **'food miles dilemma'[i].** Many organic foods are imported and some travel a long way to reach shops in the UK. The dilemma exists because one of the reasons why the consumer chooses organic is that the environmental benefits of organic production include less energy use and therefore lower greenhouse gas emissions. However, when imported, the transport involved, as well as refrigeration and packaging, produces greenhouse gases. If organic products are transported long-distance, particularly by plane, the emissions are far greater than the reduced emissions resulting from organic rather than conventional farming.

Patrick Holden, director of the Soil Association has stated that: "We do not take into account how far food has travelled, but we might well do in the future." This is not a new issue - the first Food Miles Report was published over ten years ago and in 2001 the EFRC/Sustain report *Eating Oil* focused on post-farm gate environmental impacts and organic food chains in particular.

The supply of organic foodstuffs has come to rely even more heavily than the conventional sector on global sourcing, with import levels remaining static at 56 per cent in 2003-04. The sourcing policy of the large supermarkets has played a significant role in the balance between UK produced and imported organic food. Members of HDRA are currently conducting a survey at supermarkets across the UK and recording the price, availability and source of organic produce. Initial results have shown that only 27 per cent of organic vegetables in supermarkets are UK sourced and no stores stocked UK organic broccoli, lettuce or sweet corn when in season.

Until 1999, the multiple retailers concentrated their efforts on marketing organic fresh fruit and vegetables and were yet to offer a comprehensive range of organically produced meat products. With this in mind it is interesting to note that in 1999, 82 per cent of the organic fruit and vegetables consumed in the UK were imported whereas organic meat imports stood at 5 per cent. The following year, imports rose to 30 per cent when the supermarkets became involved in marketing organic meat. This trend - of supermarkets importing organic meat has continued. In 2004 the Soil Association found that over 75% of the organic pork on sale in Asda was imported. In Tesco, only half the pork and less than half the organic beef was British.

'Food miles' has been used to compare and contrast the distance that food travels to reach the supermarket shelf and in alternative, more localised, systems such as farmers' markets. However, food miles is, and always has been, about more than distance. As a concept, it is intended to raise awareness of the changes taking place in the food system and highlight the consequences, which the consumer and policy-maker may not be aware of due to the lack of information. The aim has also been to highlight the fact that a truly sustainable food product is one in which the total environmental impact across the whole supply chain is minimised.

If the consumer wants a low-carbon food product then the best option is organic from a local box scheme or farmers' market where the produce is sourced locally, normally from within a 30 mile radius (see new study below). Many other box schemes have a 'no airfreight policy' and also source produce locally and from the UK when available.

It is not only the distance between farm and plate that is of concern; **the consumer has become both physically and psychologically distanced from the processes and practices in the contemporary food supply chain.** The link between the land, food producers and the consumer is lost. The shift to highly processed products has exacerbated the problem and has led to the situation in which the consumer has little information on the origin of food products or awareness of the social and environmental impacts associated with food production and distribution.

The 'out of sight, out of mind' culture is at the heart of our current economic system and the process of globalisation. This seems to suit the large retailers, for what you don't know you don't worry about and, more importantly, you can't change. In terms of highlighting best practice, it also makes it virtually impossible to compare the environmental impacts associated with supermarket supply chains for particular foodstuffs and those of the local alternatives. As Richard Wakeford, Sustainable Development Commissioner and Chief Executive of the Countryside Agency, has noted - "It's

hard to find out how the food [the large chain stores] sell was produced, let alone where it's been in their giant distribution systems." The extent to which supermarkets are reluctant to provide information is demonstrated in a statement by Paul Bowtell of ASDA - "No supermarkets are going to give information on food miles; it is like giving a rope to hang yourself with."

Tracability and Food Safety

Distancing effects are at the heart of the second issue to hit the headlines - the contamination of over 600 processed food products with the dye Sudan 1, resulting in the largest product recall.

The latest episode of food contamination was discovered in June 2003, at which time it was thought that Sudan 1 was confined to spices imported from India. However, the cancer-causing red dye, used to adulterate low quality chilli powder, was found in ready-to-eat meals 20 months later in February 2005. Sudan 1 is normally used as a dye in shoe polish, industrial solvents and petrol. A Food Standards Agency (FSA) spokesman admitted, "We don't know how long Sudan 1 has been used in this way. People could have been eating it for many years." The products that the FSA attempted to recall included Tesco Finest Beef in Madeira, Waitrose and Pret a Manger Tuna Mayonnaise and Asda mini chicken bites. The range of foodstuffs affected was staggering and included vegetable soup, lasagne, shepherd's pie, caesar salad, bangers and mash and prawn cocktail.

This is yet another example of the inherent dangers associated with a food system that is industrialised, consists of complicated food chains and in which ingredients are sourced and food products distributed on a global scale. Traceability is even more difficult when a contaminated ingredient from one source is used in thousands of processed products, as with Sudan 1.

Food safety and the provision of quality produce of high nutritional content is something that the public should be able to take for granted. This is something that the modern food system has failed to deliver. Pesticide residues, BSE, salmonella and many other incidents have undermined public trust in the food they eat.

Contamination of a small farm or processing unit in which the products are distributed locally puts a number of people at risk but can be contained. However, when food products or livestock are produced on a large scale and are distributed nationally or globally, as in the case of the foot and mouth outbreak in 2001 and Sudan 1, a large population is at risk and an outbreak can become extremely difficult to contain.

New evidence of the benefits of local organic food

Food miles hit the headlines again in March following the publication of a study that considered the external costs of the food system by the University of Essex and City University[ii]. These costs are a result of industrialised farming, road freight distribution, shopping by car and waste generation and include ill-health resulting from air pollution, clean-up costs associated with the removal of pesticides and nitrate from drinking water and the environmental impacts of pollution and waste. They are described as being external as they are not paid for directly by the producer, distributor, retailer or consumer.

The results of the study show that the external costs of a basket of food amount to £2.91 per person per week, 11.8% more than the price paid in the shop (£24.79).

The consumer should be aware that although the external costs of pollution do not appear on a supermarket receipt they will be part of their water and council tax charges as well as the NHS bill. Of even more concern is the fact that the food system is now a major contributor to climate change - the cost of which is beyond measure.

On a national level the financial benefits of adopting more sustainable production and distribution systems are substantial. If all farms were organic it would save £1.1bn a year, sourcing food locally would save £2.1bn and avoiding shopping by car a further £1.1bn; a total saving of over £4 billion.

This is the first attempt to quantify the external costs of the contemporary food system and estimate the economic benefits of a shift to organic farming, local food systems and sustainable transport by reducing external environmental costs.

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i. Terry Kirby - Shoppers who go the extra mile for food under fire and the editorial Consumers should pay more attention to the real cost of food. *The Independent 12th February 2005.*
ii. J.N. Pretty, A.S. Ball, T. Lang, and J.I.L. Morison. Farm costs and food miles: An assessment of the full cost of the UK weekly food basket. *(2005) Food Policy (forthcoming) Centre for Environment and Society, University of Essex and Department of Health Management and Food Policy, City University, London.*

Organic agriculture in the humid tropics

Elba Rivera Urbina[1] and Gerd Schnepel[2]

Introduction

Tropical rainforest ecosystems, such as those of Nicaragua, normally have a very high biodiversity, including rare and not yet described species. However, governments 'opened' rainforest regions for farmers and ranchers for political, social and economic reasons. Farmers also normally have a point of view or attitude which is contrary to biodiversity conservation - they simplify production to one or two crops on the same spot, usually cultivating only grains and tubers.

Lack of tradition (unlike other regions there is not the centuries of agricultural tradition in the rainforest regions) and bad advice, oriented towards short-term profits, has led farmers to destroy natural biodiversity and left little inclination to introduce biodiversity into agriculture.

Ecological agroforestry is a much more appropriate system for the region, which in the humid tropics should mean a highly diversified system of closely associated agroforestry crops.

Two principal challenges: (there are more!)

- **The mentality ... of small farmers, ranchers, decision makers, consultants, extensionists, NGOs**

Most small farmers in the region produce grains (maize, beans and rice), tubers (cassava and others) and may have some livestock: most of which is not appropriate for the humid tropics or the conservation of biodiversity. Their agricultural practices lead to diminishing soil fertility, over-exploitation, migration and a permanent move of the agricultural frontier. Existing biodiversity disappears and farmers do not easily accept new proposals such as eco-farming, based on trees and tree crops.

Most decision makers, consultants, extensionists and NGOs do not have any understanding of how natural cycles work in the humid tropics; and some do not care about the environment or the farmers' future. The short-term institutional, financial or political interests that dominate are also reflected by the farmers, who often have only a short-sighted vision of earning enough money to survive for the next three (beans!) to nine (cassava!) month period.

Farmers producing on the rainforest soils of south-east Nicaragua working since the Somoza dictatorship's so-called agrarian reform in the mid-sixties originally came from the semi-arid regions of western and central Nicaragua. They slash and burn, first the forest and then year by year their fields and pastures, and although yields have gone down from maybe 40 'quintales' (1 q = 100 pounds) to eight or five or even three, they continue ... or they sell the land to cattle ranchers and then illegally try to find new land in the protected areas. Their traditions of growing beans and corn are so strong that they do not see any alternatives, or they dream of owning livestock, equally inappropriate for the rainforest soils. They considered trees their natural enemies, and they 'know' that each species needs its own place, needs 'clean culture' ('cultivo limpio'). They love the 'nice and beautiful' mono-cropping … as learnt from the North. Moreover they fall into the traps, put in place by business or politics; for example 'responding positively' to trade in hybrid 'improved seeds' from unknown origin, distributed by the government, instead of their locally selected traditional seeds.

- **Education ... the number one priority**

Both La Esperanzita (a campesino school of organic agriculture in the humid tropics) and the organic farmers association 'Sano y Salvo - Safe and Sound' give education with appropriate pedagogical methods a high priority and frequently spend more project funds on courses and workshops than on seeds and plants. Both organisations work with farmers to explain that the practices which currently dominate agriculture are not adequate for the place where they now live, work and cultivate; as they will stay in these regions and must live under the conditions of the forest, they must change their convictions and improve their knowledge.

Our training programmes, courses and workshops are not carried out by agricultural extensionists, instead we work 'campesino a campesino' (peasant to peasant): Our association's promoters and internal inspectors are also all smallholders. The training is very much practise oriented: learning by doing. We try to stay as far away as possible from mere skill teaching; instead education focuses a change of attitude towards life itself. Having understood, felt and thought about nature, the universe, the planet and the farmer's place on it, they treat soil life, tree life and forest life in a completely different way. Farmers begin to understand why what they do affects the life of the coming generations and how it interferes with world climate, and why the Dutch want to buy oxygen from them!

The farming families working on organic farms begin to feel that they, these poor people in the hinterland of a Third World country, really are the custodians of this 'biosphere of mankind', as UNESCO defined our region in 2003. They begin to accept this goal and respond

positively to the challenge, even though they are dependent on external help to put organic farming into practise. So the connection between biodiversity and organic agriculture is obvious: farmers learn to respect natural biodiversity and care for it, because it is the basis of agriculture and of carrying it out in a satisfying way. And they introduce biodiversity into their plots, taking care of their soil in the best way.

Practical challenges for the farmers and their organisation

Farming families live of the produce of their work in a direct way - they eat it - and they sell the produce to get the money for the other things one may need. So it is of course impossible to make them forest rangers: they need to practice agriculture and they should be able, and want to be able, to live from it with dignity. Organic agriculture has the means to help realise this ambition. Instead of annual reductions of yields, yields go up and production becomes more stable. Farmers in the North often accept lower yields when converting to organic production, but we convert to organic production out of the need to produce more!

Ecology demands diversity … and the farmers' economy responds to it: it stops the dependence of one or two products being the basis of the farming family's income. In the case of the humid tropics organic farmers grow some 40, 50 and even more crops: most of them for local and international markets and the rest providing diversified nutrition for the family and other local consumers.

But to work this way, the farmer is confronted with some practical, technical and organisational challenges, too. In particular:

- He or she has to know the production details, life cycles, shadow tolerance, pruning necessities etc. of 40 or more crops.
- The organic farmers have to organise themselves in a very effective and sophisticated way, because no one farmer will produce enough of one product to sell it as organic - or certified organic.
- The farmers must produce marketable crops at the same time as the other members of the organisation, i.e. to have enough of the same product at the same time and of the same - certified - quality.
- Bad infrastructure and transportation problems, exacerbated in our case by difficult climatic conditions (i.e. heat and humidity), require processing at the place of origin.
- The organisation needs people to help manage the challenges of marketing locally, nationally and for export:

Some of these challenges seem to be difficult, but they are real and normal in buffer zones of rainforest reservations. And one must overcome them, because to give up would mean to give up on saving biodiversity and give up on the farming families' future.

Conclusions

Organic agriculture in the humid tropics is necessary for keep biodiversity alive: for conservation one needs a high connectivity between natural forests and the surrounding areas. In agricultural areas this is only possible by retaining relatively high percentages of forest within the farms and by introducing biodiversity into agricultural management regimes. In the humid tropics even organic methods which are not suited to the local conditions, i.e. organic 'mono-cropping' or organic production of field crops instead of tree crops, lead to the destruction of soils and the biosphere.

Agriculture is an art. Therefore many efforts have to be undertaken to professionalize small farmers. It is also important for the public to be well informed, especially the consumers buying produce from biodiversity conservers.

To move from conventional and mono-cropping systems of agriculture to organic agriculture, including the protection of natural biodiversity and introduction of agro-diversity, in the first place requires a change of attitude. Therefore education and appropriate methods have priority, but to succeed these must consider small farmers academic level and their special ways of perception, their traditions and culture.

Saving biodiversity is 'a must' for mankind and for our civilization's survival on this planet. Agriculture is 'a must' too; so only agriculture which cares about biodiversity, conserving nature and soil, is an option for the future. This obvious truth only has a chance to be accomplished when the farming community - especially if living and working close to the 'hotspots' of high biodiversity - gets the chance to produce food in sufficient quantity and of high quality on the same spot for centuries. If this fact is ignored by politicians, by development organisations and institutions, by society or by the farmers, the small holders all over the Southern world will destroy what was meant to be the basis for human life on Earth.

IFOAM, Manual of organic agriculture in the humid tropics, FiBL - Forschungsinstitut für biologischen Landbau (Research Institute of Organic Agriculture), Suiza, 2004. was published in November 2004 in English and includes a case study on Sano y Salvo. Sano y Salvo - Safe and Sound, First Small Farmers Association for Culture and Ecological Production in the South Atlantic and Central Autonomous Region of Nicaragua see details on the website: http://www.eco-index.org/ong/sys-ni-eng.html

IFOAM consultation on organic principles

EFRC's Director, Lawrence Woodward, has been part of an international working party considering new principles for IFOAM. The proposals are now out for consultation.

Four principles have been created to identify organic agriculture: The principle of health; The ecological principle; The principle of fairness and The principle of care.

Each principle is articulated in a statement with an explanation. The principles all belong together to be used interdependently in consideration with the other principles. Together, they have been composed to inspire action to make their vision a reality.

Principle of health
Organic Agriculture should sustain and enhance the health of soil, plant, animal and human as one and indivisible.

This principle is the foundation of organic agriculture. It states that the health of all living systems and organisms, from the smallest in the soil to human beings, are mutually dependent. Even though they are separate entities, they belong together and form larger entities. It builds on the shared origin of the words "whole" and "health" and stresses the integrity of living systems as a whole.

Health is the maintenance of physical, mental and social well-being and not simply the absence of disease or illness. It is a continual process that accumulates and distributes the materials and energy necessary for the function of all living organisms. Mutuality, resilience, self-regulation and regeneration are key characteristics of this process.

The role of organic agriculture whether in farming, processing, distribution or consumption is to sustain and enhance the process of health at all stages and levels.

Ecological principle
Organic Agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.

This principle roots organic agriculture within living ecological systems. It stresses that production is to be based on ecological processes instead of external inputs. Nourishment and well-being is achieved through the ecology of the specific production environment. For example, in the case of crops this is the living soil; for animals it is the farm ecosystem: for fish and marine organisms, the aquatic environment.

Production, through farming or wild harvesting, should not be exploitative. It should be managed in accordance with the cycles that are observed in nature and all living systems. It should seek to enhance the properties of resilience, self-regulation and regeneration inherent in them. These cycles are universal but their operation is site specific. Therefore organic management must be adaptive and appropriate to local conditions, ecology, culture and scale.

This principle also applies beyond the farm to the processing, manufacturing, distribution and retailing of the products of organic agriculture. The concept of cycles should be applied to minimize resource inputs by enhancing reuse and recycling of materials and energy. Organic agriculture should also ensure that it does not adversely affect living systems, such as landscape, habitat, biodiversity, water or the general environment, which exist outside of its production areas.

Principle of fairness
Organic Agriculture should be built upon relationships that ensure fairness with regard to the common environment and life opportunities.

This principle deals with human relations and relations between humans and other living beings. It stresses that organic agriculture should maintain and conduct these relationships in a manner that ensures fairness: a concept that includes the characteristics of equity, respect, justice and stewardship.

Its use and management of natural and environmental resources should not perpetuate social and ecological injustice. Instead, it should demonstrate how production and consumption can be socially and ecologically equitable and just by developing relationships built on fairness. Human relationships whether within or touched by organic agriculture should ensure fairness at all levels and to all parties - producers, farm workers, processors, distributors, traders or consumers - and should be seen to do so.

With regard to specific ecosystems and environmental resources, organic agriculture and all parties to it should acknowledge that rights and ownership are temporary and are ultimately held in trust for all living organisms and future generations. Its real environmental costs should be accounted for and should be transparent.

This principle insists that animals are provided with the conditions and opportunities of life that accord with their physiology, innate behavioral characteristics and well-being. Organic production systems should be constrained by the animal's needs - and not the other way around.

Principle of care

Organic Agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

This principle primarily stresses the approach of organic agriculture to strategic and day-to-day management. Precaution and responsibility is called for, not risk assessment which is a narrow notion based on a narrow scientific or economic appraisal. By contrast care: precaution and responsibility encompass evidence and perspectives that can be scientific but can also be outside of the realm of science, have a moral content and a relevance to non-experts. This principle should govern management, development and technology choices in organic agriculture. Such a precautionary approach to decision-making will recognise that, even when the best scientific knowledge is used, there is often a lack of knowledge with regard to future consequences and to the plurality of values and preferences of those who might be affected.

Organic agriculture is a living and dynamic system. It cannot be static and survive; it has to evolve in the face of both internal and external demands and conditions. Consequently, existing practices and technologies need to be reviewed and if necessary changed, new ones assessed and introduced. Efficiencies can be found and improvements made but this should not be at the risk of jeopardizing the health and well-being of current and future generations and the environment. This principle therefore, like the principle of fairness, depends on the involvement or representation of all stakeholders and it needs institutions of openness, transparency and participation.

Italian co-existence law; Cereals & Dairy ManComs;

Further changes in DG AGRI Italian Co-existence Legislation adopted:

The Italian co-existence law was adopted in the Italian Parliament this week - the final step in the legislative process for this controversial dossier, which nearly split the ruling party in Italy.

The new rules require all 20 regions to have formulated their own individual coexistence plans by 31st Dec 2005, following guidelines drawn up by organic, conventional farming and biotech experts. GM farmers who contaminate other crops through negligence or non-adherence to the co-existence plans may face fines of between 2 500 and 25 000, according to the Italian law. Regions will be allowed to declare themselves "GM-free", and 13 of the 20 regions have already indicated that they will do so. Farmers who violate GM-free areas could face a prison sentence

Landmark Victory in World's First Case Against Biopiracy!!

European Patent Office Upholds Decision to Revoke Neem Patent

Munich, March 8, 2005. In a landmark decision, the European Patent Office upheld a decision to revoke, in its entirety, a patent on a fungicidal product derived from seeds of the Neem, a tree indigenous to the Indian subcontinent.

The historic action resulted from a legal challenge mounted ten years ago by three Opponents: the renowned Indian environmentalist Vandana Shiva, Magda Aelvoet, then MEP and President of the Greens in the European Parliament, and the International Federation of Organic Agriculture Movements (IFOAM). Their joint Legal Opposition claimed that the fungicidal properties of the Neem tree had been public knowledge in India for many centuries and that this patent exemplified how international law was being misused to transfer biological wealth from the South into the hands of a few corporations, scientists, and countries of the North. The EPO's Technical Board of Appeals dismissed an Appeal by the would-be proprietors, the United States of America and the company Thermo Trilogy, and maintained the decision of its Opposition Division five years ago to revoke the Neem patent in its entirety, thus bringing to a close this ten-year battle in the world's first legal challenge to a biopiracy patent.

For further information, contact:
Research Foundation for Science,
Technology and Ecology:
E-mail: vshiva@vsnl.com;
Web Site: www.navdanya.org

The role of participatory processes in organic research programmes

Notes from a COR workshop held at: HDRA, Ryton Organic Gardens, Coventry on 25th January 2005

Introduction
The aim of the workshop was to explore and discuss the relevance of a participatory approach to organic farm research in general, taking some on-going projects as examples. The context for the workshop was to examine:

1) who is setting the research agenda and how?
2) are the organic research programmes addressing the needs of farmers, growers and advisors, researchers and policy makers?
3) is the research addressing the needs of the wider organic movement?
4) how can wider stakeholder engagement with research be encouraged?

Summaries of the research approach of four contrasting 'participatory research' projects were presented.

Stakeholder Analysis
An exercise on Stakeholder Analysis was run by David Gibbon. This is the identification of a project's key stakeholders (persons, groups or institutions with interests in a project or programme), an assessment of their interests and the ways in which these interests affect project riskiness and viability.

A group exercise using CATWOE analysis was carried out - CATWOE stands for Customers of the process, Actors who carry out the process, Transformation (the process itself), Weltangshaung (world views that put the process in context), Owners (those who could stop the process) and Environmental constraints - by brainstorming a list of projects or outcomes considered useful in order to advance the organic agenda. The exercise was useful in outlining the roles of participants in projects.

Discussion of Projects
Experiences with participatory research in four organic research projects, covering various sectors, were given.

- Participatory weeds project - Gareth Davies HDRA
- Participatory cereal variety project - Bruce Pearce EFRC
- Poultry - Josie O'Brien EFRC
- Farming Connect organic herbage seed project - Heather McCalman IGER

Participants were asked to evaluate the projects using a stakeholder approach to determine who was participating and in what capacity.

The results of the stakeholder analyses and project descriptions emphasised the importance of perceptions. The participatory approach provides a different emphasis, is not a cheaper option, and can often take a great deal more organisation. The results can however be more rewarding and applicable, to farmers in particular.

Evaluation of different research approaches
In this energiser exercise, participants were asked to split into four groups and do a SWOT (strengths, weaknesses, opportunities and threats) analysis on each of four categories of research:

Contractual - researcher designed and implemented (farmer input minimal)
Consultative - researcher designed and implemented jointly (farmer manages trial)
Collaborative - joint consultation, researcher in control but farmer involved in planning and design and implements trial
Collegial - fully participatory with design, implementation and evaluation by all partners

This emphasised the advantages and disadvantages of the different approaches to on-farm research. It should be appreciated that the research types form a continuum and are not discrete types and that different approaches might be necessary or desirable depending on the topic or issue being addressed.

Qualitative research and evaluation
A brief talk was given by Francis Harris of the University of Kingston on qualitative research and evaluation. A discussion indicated that the biologists present had not realised that social science approaches were also rigorous and involved corroboration and triangulation of information in order to build up reliable data sets.

Discussion of possible research ideas and issues arising from the day
Ideas of ways to move the participatory agenda forward included using participatory methods for research into climate change, local food production, biodiversity and health and developing ways of measuring the impacts of participatory projects.

Several issues arose during the meeting including the role that DEFRA plays - whether they are owners and/or actors of the process and how they cope with participatory research internally.

A full version of this report can be found on the EFRC website htrticles.php&art_id=45

Learning and research for sustainable agro-ecosystems by both farmers and scientists.

A new EFRC research project

Elm Farm Research Centre is currently involved in a project with social scientists at Middlesex University and the University of Kingston that is part of the new Rural Economy and Land Use (RELU) research programme.

This programme is encouraging the use of interdisciplinary research in the area of sustainable rural development and is funded by biological (BBSRC), environmental (NERC) and social science (ESRC) research councils as well as DEFRA and SEERAD.

The project is a scoping study which draws on previous research from a range of disciplines including applied biology, agriculture, management studies, and sociology of science. The aim of this project is to understand the processes of innovation from the perspectives of farmers, and scientists working at the level of whole farm systems. Through examining examples of successful interaction, the project will identify those factors that encourage collaboration between farmers and scientists.

The study will comprise of a review of the literature and the use of a series of case studies. The literature review will provide the material for a conceptual framework to be examined and tested through the project and will examine literature from agricultural research methodologies, small business strategic management and innovation, and the sociology of science.

In total 10 cases of farming enterprises working with scientists will be examined. These will be selected from existing and completed research projects, ensuring that there are a range of different approaches to interaction and different degrees of collaboration/ participation. The interactions will involve DEFRA funded research, research by levy boards and private sector research. While many cases will involve research for organic farming, other interesting examples of businesses participating with researchers for development of sustainable land use technologies will also be selected. Within each case study, semi-structured interviews will take place with four individuals having differing roles within the study, recognising that valuable knowledge is generated by employees as well as business owners and senior managers.

Interviews will be carried out over the next couple of months, and the project will be producing conclusions over the summer. Hopefully this project can help to determine how farmers and researchers can best collaborate to produce useful and rigorous results in a systems context, which can then guide methods used by future research projects. We will be reporting on this project and its progress in future *Bulletin*s.

GM Sugar Beet Research Leaves Wildlife Short of Grub

New research on GM sugar beet published shows that different crop management will leave the UK's farmland wildlife short of food at some stage in the year.

The research carried out by the UK's only sugar beet research centre (Brooms Barn) shows that all three GM sugar beet management approaches so far proposed fail to provide weeds and weed seeds for farmland in every season.

"They can enhance weed seed banks and autumn bird food availability compared with conventional management, or provide early season benefits to invertebrates and nesting birds, depending on the system chosen"

Research published in 2003 on the Farm Scale Evaluations found that GM sugar beet spraying was significantly more damaging to wildlife than the management of conventional crops.

Brooms Barn used two techniques on the GM beet to increase weed cover or seed production -band spraying in the early season or delayed spraying. Only one technique can be applied to the crop.

Commenting, Five Year Freeze Director, Pete Riley said *"The choices offered by GM sugar beet cropping appear to offer farmland birds three options: insufficient food throughout the year, early season food or autumn food. This is bad news for resident birds which need food all year round. Brooms Barn's proposal makes sugar beet more complicated and they neglect to tell us how growing regimes will be monitored and enforced and crucially who will pay for these essential requirements. We doubt that this last ditch attempt to save GM sugar beet will have much credibility with regulators or farmers"*

Reference: May M (et al) Management of genetically modified herbicide tolerant sugar beet for spring and autumn environmental benefit *Proc. R. Soc. B.* 19th January 2005.

For more information , calls to Pete Riley 07903 341065

FIVE YEAR FREEZE CAMPAIGN

Defra Research Consultation -

Have your say, get involved, they want to listen!

Elm Farm Research Centre has been awarded a new project by Defra to undertake a public consultation on what should be delivered from publicly funded research into organic food and farming. This work will support the work of the ACOS R&D subcommittee and will be led by EFRC in conjunction with the Organic Centre Wales, SAC, Greenmount Campus, CAFRE and RULIVSYS.

This is an important piece of work for the organic sector in the UK that has been reinforced by Dr Christine Watson (Chair of the ACOS R&D subcommittee) when she recently told the first public consultation "This is a unique opportunity for organic stakeholders to speak to Defra and we can ensure that they will listen to the issues and aspirations that you tell us about".

The overall project objective is;

"To inform the ACOS R&D sub-committee in its work on identifying research priorities for the UK organic farming and food sector through the identification and analysis of the issues and aspirations that stakeholders feel should be addressed by publicly funded research into organic farming in the UK".

The project is being split into 4 sections. They are : a collation of existing research needs and priorities for organic farming; an updating of our previous work on research undertaken in the UK into organic farming; a public consultation with organic stakeholders throughout the UK and a study of the consultation process to identify and report strengths and weaknesses of the whole process. The project started at the beginning of February and will be completed by the end of June.

The public consultation will be undertaken using two approaches. The first is a series of public workshops. These will take place throughout England, Scotland, Wales and Northern Ireland (see table), however, spaces will be limited so book up early.

The meetings will take around 3 hours and all stakeholders are encouraged to attend and participate. They are a real attempt by Defra to obtain the views of and to listen organic stakeholders needs and aspirations that can be addressed through research and development.

The second approach is to use a web based form. This will be used in a similar way to the workshops but can be used by stakeholders who cannot get to the workshops. The form can be found at www.efrc.com. The outcomes of the workshops and the web consultation will be analysed by the project team.

As far as we are aware, this is the first time that Government has consulted publicly on any agricultural research needs. It isfor this reason that the project will also include a study of the workings of the process.

We urge all stakeholders to participate.

Workshop location.	Date and time	Contact
The Kempen Room, The Maltings, Ship Lane, Ely, CAMBRIDGESHIRE, CB7 4BB	7th April 2005 2pm – 5pm	Gillian Woodward – EFRC 01488 658298 workshop@efrc.com
Nantyffin Motel, Llandissilio, Nr Clynderwen, PEMBROKSHIRE, SA66 7SU.	12th April 2005 11am – 2.30 pm (lunch provided)	Sue.Fowler – OCW 01970 622248 Sue.Fowler@aber.ac.uk
Bowland Suite, Myerscough College, Bilsborrow, Preston, LANCASHIRE, PR3 0RY	12th April 2005 2pm – 5pm	Gillian Woodward – EFRC 01488 658298 workshop@efrc.com
Oakley Arms Hotel, nr. Blaenau Ffestiniog, GWYNEDD, LL41 3YU	14th April 2005 11am – 2.30pm (lunch provided)	Sue.Fowler – OCW 01970 622248 Sue.Fowler@aber.ac.uk
Westex Lounge, Royal Bath & West Show Ground, Shepton Mallet, SOMERSET, BA4 6QN	14th April 2005 2 – 5pm	Gillian Woodward – EFRC 01488 658298 workshop@efrc.com
Greenmount Campus, College of Agriculture, Food and Rural Enterprise, ANTRIM, BT41 4PU	20th April 2005. 11am – 3pm	Adrian Saunders – Greenmount Campus 028 9442 6765 adrian.saunders@dardni.gov.uk
Commonwork, Bore Place, Chiddingstone, Edenbridge, KENT, TN8 7AR.	26th April 2005 2pm – 5pm	Gillian Woodward – EFRC 01488 658298 workshop@efrc.com

Scotland and North East England: There will also be workshops throughout Scotland, some of which will be closer to North East of England than the events opposite, the dates and venues will be announced soon. For details contact SAC on 01224 711000

INTERRUPTED BROME (*BROMUS INTERRUPTUS*), AN ENGLISH ENDEMIC GRASS

By Ron Porley, English Nature

The grass *Bromus interruptus* (interrupted brome) has the dubious honour of being classified as 'extinct in the wild'. 100 years ago this grass was a characteristic member of sainfoin, clover, hay meadows and other arable fields in southern England, scattered mostly south of a line from the Wash to the Severn estuary. It was discovered in Cambridgeshire in 1849, with a peak of records around 1920. However, the introduction of efficient seed cleaning techniques, use of more competitive crop varieties and the increasing use of nitrogen fertilisers and herbicides caused a rapid decline, and the last time interrupted brome was seen in the wild was in 1972.

The story does not end there. Fortunately a botanist took this grass into cultivation in 1963, just before it completely disappeared from the English countryside. The grass was grown on and several populations, albeit arising from the one initial plant, are now held at various botanical gardens and institutions. From this it has been possible to 'bulk up' seed production, and as a result the Millennium Seed Bank at Wakehurst holds in excess of 82,000 seeds (although about 50% have just been used in a reintroduction trial in Cambridgeshire and Oxfordshire).

The ex situ material offers us an excellent opportunity to reinstate this enigmatic grass back into the wild. The true origin of interrupted brome is speculative, but it is unknown elsewhere in the world (there was an introduced short-lived population in Holland). DNA analysis has shown that interrupted brome is very closely related to soft brome (B. hordeaceus), and it may have arisen as a mutation of that species but further work on this question is needed. Kew has undertaken genetic fingerprinting studies on the surviving material and revealed that the grass has retained a higher than expected level of variability given the history of this plant; this bodes well for future reintroduction work.

Interrupted brome is a poor competitor and is soon crowded out by other more vigorous annual grasses and perennials, so regular disturbance (cultivation) are necessary to sustain it. The trials in Cambridgeshire and Oxfordshire are providing valuable information on the biology and management requirements of this grass, but there is still much to learn. Working together with farmers and Kew, English Nature hope to find many more reintroduction sites on chalky soils across southern England so once again this grass can populate its former range. We will be working to establish some experimental sowings in the near future, if you are interested in growing this grass on your land we would be very interested in hearing from you.

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Rare moss discovered at Elm Farm in Berkshire

The British Bryological Society with English Nature is conducting a 3-year survey of mosses and liverworts (bryophytes) of arable land throughout the British Isles to improve our knowledge of this neglected group and develop conservation measures. The survey is due to close in May 2005, and so far over 700 fields have been surveyed.

There are over 1000 different kinds of bryophytes found in the British Isles, and many grow in arable fields. Over wintered cereal stubble is ideal moss habitat. Mosses play an important role in soil stabilisation and nutrient recycling. A good field may have 20 or more different kinds, and some are very rare. Thus a number are included in the British Red Data Book as under threat, and three are priority Biodiversity Action Plan (BAP) species.

One such moss, Spreading-leaved beardless-moss (*Weissia squarrosa*) was recently found on an organic over wintered stubble field at Elm Farm Research Centre. This moss is classified as Endangered in Britain and was last recorded in Berkshire in 1968. Until recently it had not been seen anywhere in Britain for more than 10 years, and therefore, although mentioned in the UKBAP, does not have a full Action Plan. Since the start of the arable bryophyte survey, Spreading-leaved beardless-moss has been found at a handful of sites on calcareous soils, mostly in the Cotswolds and Cambridgeshire. Arable mosses typically have ephemeral lifestyles and need regular disturbance (cultivation) to provide open ground so they can quickly establish from buried spores. Intensive agriculture, with heavy applications of nitrogen and ever-earlier sowing dates put these tiny plants under pressure.

Ron Porley, English Nature Botanist

More Organic Taste Tests

Research on the link between food crop and taste

The link between taste, and the production of a food crop, needs to be explored, claim food scientists on the back of new research into the widely consumed potato.

Organically and conventionally grown potatoes may be told apart by flavour, say the US researchers, but only if the potato skins are left on.

According to lead author Matthew Kleinhenz, it may be the glycoalkaloids (natural protective agents in potato plants and tubers), which can impart a bitter taste, that are responsible for the perceived flavour differences, as glycoalkaloids are thought to move from outer (such as skin) to inner (such as flesh) layers of potatoes during boiling.

"The results provide additional evidence that linkages exist between the methods used to grow crops and the responses consumers may have when eating them," said Dr Kleinhenz, based at the Department of Horticulture and Crop Science at Ohio University.

He believes science should investigate these linkages within the context of management systems, including organic. The goal would be to design cultivation systems that optimise the quality - sensory and nutritional properties - of vegetables and other crops.

For the small study, a panel of fifteen taste testers was asked to evaluate boiled samples of potatoes that had been grown organically with compost, organically without compost or conventionally.

Dark Red Norland potatoes - the most popular redskin potato in the US - were evaluated.

The scientists used the 'triangle test' method to evaluate the panel's responses, which involves tasting three samples, two of which are identical and one of which is different. The test is repeated to ensure that the panellist is not identifying the 'odd one out' by luck.
But the panellists were merely looking for taste differences - they did not know how the potatoes had been grown.

When the potatoes had been peeled prior to cooking, panellists could not distinguish between the conventionally and organically grown potatoes.

But when the skins were left on, according to the results, panellists tended to be able to identify a difference between the conventionally and organically grown potatoes. However, in similar tests, fewer panellists differentiated between organic potatoes grown with / without compost.

"The data suggest that, in this study, the ability of panellists to consistently differentiate samples depended on whether the skin of the tubers had been removed before boiling," said Dr Kleinhenz.

Full findings are published in the February issue of the Journal of the Science of Food and Agriculture

New professorships in organic farming go to two researchers from the Louis Bolk Institute

The creation of two new chairs in organic agriculture - one in Wageningen, the Netherlands, and the other in Kassel, Germany on 1st March 2005 - represents a major boost for the organic sector.

Plant breeding and cultivation expert Dr Edith Lammerts van Bueren will hold an endowed chair in Organic Plant Breeding at Wageningen, while Dr Ton Baars, biologist and livestock specialist, has been appointed Professor of Biodynamic Agriculture in Kassel (Witzenhausen).

EFRC sends them both our congratulations and good wishes for the future.

MASCOT is the major long-term experiment comparing conventional and organic management for a 5-year stockless arable crop rotation of the whole Mediterranean area.

MASCOT has been established in 2001 as part of the activities on organic farming research carried out at CIRAA by the University of Pisa and the Scuola Superiore Sant'Anna of Pisa, Italy.

Further details from:

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Organic vegetable market stabilises

A report by Roger Hitchings, Head of OAS and working on the project.

The UK organic vegetable market became more stable and self-sufficient during the 2003-2004 season, according to a study by HDRA.

The UK Organic Vegetable Market study, funded by DEFRA, reports that 123,500 tonnes of organic vegetables were traded during this period, representing a total retail value of £197 million. More than 40 packers and wholesalers were involved in this research, which aims to provide detailed information on the total market and supply of individual organic vegetable crops (see Table 1 below).

Chris Firth, Senior Business Analyst for HDRA, says: "Our research shows that the organic vegetable market continues to grow, with traded volumes rising by three per cent in 2003-2004. This does not compare to the dramatic increases of the year before, but does show that this market has stabilised and matured."

Although the market is expanding overall, the study has revealed substantial variation between individual crops and market outlets. For example, traded volumes of carrots and salads have increased about 25 per cent, while potato and cabbage volumes have fallen by around 12 per cent. Direct outlets have increased their share of the total organic vegetable market to 14 per cent. The number of box schemes and home delivery services has increased to 500, with a 20 per cent rise in sales, and the number of farmers' markets has also risen by 11 per cent.

Pre-packers have reported increased market demand, although at a lower rate than in recent years and with a better matching of demand and supply - hence their market share has remained similar at 67 per cent. On the other hand, the wholesale sector has reported problems sourcing sufficient volumes with good consistency, quality and organisation. This is reflected through a general decline in volumes sold through wholesalers.

Competition within the organic vegetable market is constantly increasing, according to the packers and wholesalers interviewed as part of the study. This, combined with supermarket rivalry, has intensified price pressures.

On a positive note, UK self-sufficiency has risen to an average of 60 per cent for organic vegetables. However, these percentages do vary on a crop-by-crop basis - from 97 per cent for swedes to 34 per cent for onions. Natalie Geen, co-author of the report, says: "The study suggests there may be potential for increasing UK sourcing of organic carrots, cauliflower and cabbage to approach conventional levels. In contrast, organic lettuce and tomatoes already exceed the level of UK sourcing of their conventional counterparts."

Year	Total Market (tonnes)	Retail Value (£M)	% UK Produced (volume)
2001-02 (revised data)	98,500	143	58
2002-03 (revised data)	120,000	169	59
% Increase	23	18	2
2003-04	**123,500**	**197**	60
% Increase	**3**	17	2

Table 1: Summary of results from 2003-04 organic vegetable market study

Building upon this work, HDRA will perform an in-depth survey of direct outlets in the organic vegetable market in February. Forms will also be sent out to packers and wholesalers for the 2004-2005 season in April.

The 2003-2004 UK Organic Vegetable Market report will be available from HDRA in March, and previous reports are available at www.organicveg.org.uk.

For further details call Natalie Geen on 024 7630 8200 or email ngeen@hdra.org.uk.

OAS Soil Analysis Service

Price increase

We are afraid that, with immediate effect, the price of our comprehensive analysis will rise from £51 to £56.88 (incl VAT) as a result of physical analysis cost increases passed on by our laboratory.

We are pleased that the standard analysis cost will remain at £18

New Environmental Payments Scheme launched

Roger Hitchings, Head of Advisory Services and ACOS member considers the New Regimes

If you are not aware that there are some major changes taking place in the way that food producers are being supported you have either been holidaying on the planet Zog or had your head firmly buried in the sand. That said it is one thing to know that changes are taking place and it is another thing entirely to know exactly what the changes mean for organic producers. These were launched by the Government on 3rd March. **The Environmental Stewardship Scheme (ESS) is a new agri-environment scheme that will provide funding to farmers and other land managers in England who deliver effective environmental management on their land.**

The scheme is intended to build on the recognised success of the Environmentally Sensitive Areas (ESA) and the Countryside Stewardship Scheme (CSS). Both of these schemes have now closed as has the Organic Farming Scheme. The primary objectives of the ESS are to:

- conserve wildlife (biodiversity)
- maintain and enhance landscape quality and character
- protect the historic environment and natural resources
- promote public access and understanding of the countryside

Within these primary objectives the scheme also has these secondary objectives:

- genetic conservation
- flood management.

The new scheme has three elements:

- **Entry Level Stewardship (ELS)** is a 'whole farm' scheme open to all farmers and land managers who farm their land conventionally. Acceptance will be guaranteed provided the scheme requirements can be met.
- **Organic Entry Level Stewardship (OELS)** is a 'whole farm' scheme similar to ELS, open to farmers who manage all or part of their land organically and who are not receiving aid under the Organic Aid Scheme (OAS) or the Organic Farming Scheme (OFS). Farms with a mix of organic and conventional land should be entered into OELS.
- **Higher Level Stewardship (HLS)** essentially replaces ESA and the CSS. It will be combined with ELS or OELS options and aims to deliver significant environmental benefits in high priority situations and areas.

ELS provides a straightforward approach to supporting the good stewardship of the countryside. OELS takes a similar approach, but is geared to organic and organic/ conventional mixed farming systems. HLS is designed to build on ELS and OELS to form a comprehensive agreement that achieves a wide-range of environmental benefits across the whole farm. HLS concentrates on the more complex types of management where land managers need advice and support and where agreements will be tailored to local circumstances. ELS and OELS go beyond what will be required under the Single Payment Scheme (SPS) cross compliance conditions. Entering into an Environmental Stewardship agreement will not remove any cross compliance obligations.

Implications for Organic and Converting farmers.
So much for the preamble. Much of the above has been taken or gently paraphrased from the Defra website (www.defra.gov.uk/erdp/schemes/es/default.htm). Readers will not be surprised to hear that there are pages and pages of handbooks, maps, FAQs, guidance, downloadable application forms, etc., etc. on the site. There is neither the time nor space to cover all this information in detail so the remainder of this article will focus specifically on what this new scheme has to offer the organic farmer. This review cannot hope to cover all the possible ups and downs given the time frame and future editions of the *Bulletin* will return to this scheme and others. I should also note that this article is focusing on the English scheme that has just been launched. We are still waiting for an announcement on the launch of the equivalent scheme for Wales - this will be known as Tir Cynnal.

One of the first key issues to note is that the ***Organic Farming Scheme has now closed to all new applications under both the conversion and maintenance options.*** This scheme along with its predecessor, the Organic Aid Scheme, has supported the conversion process by attempting to compensate farmers for income foregone. The process of application was relatively straightforward in that the main points to settle were the respective types and areas of the land being applied for. No view was taken on the way in which that land was managed as this was considered to have been covered during the initial process of certification with a recognised organic inspection body. All new applications for OELS support will have to follow the more involved approach outlined below.

Farmers applying to the OELS must first ensure that the land is eligible and that all the land is registered on the Rural Land Register (RLR). It will already be on the

RLR if the land has been registered through IACS or has been in receipt of payments from a range of ERDP agri-environment programmes. If land is unregistered on a non-IACS farm, contact must be made with the Rural Payments Agency (RPA) office in Newcastle (0845 603 7777, customer.service.centre@rpa.gsi.co.uk. If part of the farm is IACS registered then additional land can be registered by contacting the IACS section of the local Rural Development Service (RDS) office. Unregistered land could include woodland, scrub and other marginal areas. Applicants must also have a Vendor Number - once again this will already be in place if the farm is IACS registered or is in receipt of ERDP scheme payments. A farm or small-holding that does not have a Vendor Number should contact the RPA using the above contact details.

The next step once the land is registered and a vendor number issued is to contact the relevant RDS office with name, address and CPH holding number. It is important to realise that applicants to the OELS will have to clear the same hurdles as ELS applicants before becoming eligible for the organic supplement and conversion top-up payments. It will first be necessary to prepare a simple record of environmental features on the farm - this will done using the Farm Environmental Record (FER) map issued by the RDS.

When pre-filled application form and maps are requested a 'points target' will be issued that will be related to the size of the farm (in essence this will amount to 30 points per hectare averaged across the farm for ELS). There is no minimum holding size for entry into the ELS (and hence the OELS). Applicants will be able to choose from a wide range of environmental management options each of which will earn 'points' towards the prescribed total. Options could include hedgerow management, low input grassland, buffer strips, management plans and options to protect soils.

Applicants will have the flexibility to decide how much of each option to have and where to site them on the holding until enough have been chosen to reach the 'points target'. Where relevant put the location of the chosen options on the Options map provided by RDS - note that this means that there will be two maps to return with the application (FER and Options maps). If enough ELS options are delivered entry into the scheme will be guaranteed. Applicants will be invited to consider certain local environmental priorities by referring to a description of the relevant Joint Character Area (JCA) in which the farm is situated. In conjunction with other agencies Defra has defined over 150 of these JCAs covering the whole of England - pdf documents for each JCA can be downloaded from the Defra website (www.defra.gov.uk/erdp/schemes/els/making_most.htm).

This moderately complicated exercise will result in payment of £30/ha/yr for an initial five-year period. Applicants to the OELS will be required to achieve a target of 60 points per hectare in return for payments of £60/ha/yr. As noted the first 30 points/ha will need to be achieved by signing up for management options while the second 30 points/ha will automatically be granted by demonstrating that the land is under organic management. This will involve the tendering of copies of the certificate of registration and schedule issued by the relevant certification body.

New entrants to organic farming can also apply for conversion payments in addition to the £60/ha/yr payments mentioned above. They will need to go through the same process as above and it must be done within 12 months of the initial application to the particular certification body. Payments will be £175/ha for all improved land (no distinction will be made for land that was formerly AAPS eligible) for the two years of conversion and £600/yr for top fruit (apples, pears and stone fruit but excluding cider apples) for three years. No conversion payments will be made for unimproved land though it should be noted that the definition of unimproved land has changed from that used for the Organic Farming Scheme. It is now defined as land that has not received inputs or been cultivated for the twenty years prior to the application.

Conclusions

For those that are eligible the OELS is clearly a scheme that should be taken advantage of. It offers both conversion and management payments at levels that could make a difference to farm viability. Over the first five years of an agreement that includes conversion payments the great majority of producers will receive more than they would have received under the Organic Farming Scheme. That said the ELS component of these payments is available to all producers. It also clearly will involve more work in putting together the initial application but this will apply to everyone who applies to Environmental Stewardship.

It is expected that organic producers will have few problems in offering sufficient management options to meet the ELS requirements because most of them should already be implemented under the organic standards. This will no doubt be the case but organic producers should not take this process for granted - there could be some farms that have not been fully diligent in this area. This article is not covering the Single Payment Scheme (SPS) but there could be further surprises for some organic producers when they come to assess soil

problems on their farms as part of putting together a Soil Management Plan.

Some potential problems have already been identified. One of the most serious concerns farms that are currently in long duration ESA agreements. Under the terms of Environmental Stewardship such land is not eligible for payments under the ELS or the OELS. This may seem reasonable in terms of ongoing payments as many of the ELS options may be supported by ESA payments. If such a farm wanted to convert to organic production, however, there would be no opportunity to access the conversion payments while the ESA agreement was in place. This despite the fact that significant areas of ESA land could fall into the OELS improved category. This could have significant implications for farmers contemplating conversion in ESAs across England such as the Cumbrian Uplands.

A similar situation could apply to farms with Countryside Stewardship Scheme agreements in place, although these are not whole farm agreements.

It will however be possible to apply for OELS on non-agreement land and this will include conversion payments. Parcels of land that are larger than 15ha in the LFA will not be eligible for the OELS - these will have to be entered into the ELS and payments of £8/ha/yr will be made. Such parcels will, therefore, not be eligible for conversion payments though it is likely that much land in this situation would fall into the unimproved category and not be eligible anyway.

This has been a brief review of the ELS and OELS components of Environmental Stewardship and it is virtually inevitable that not all the key points have been covered.

Further information is available from the Organic Advisory Service, 01488 657600, oas@efrc.com. You should also visit the Defra website from which a range of relevant documents can be viewed and/or downloaded as may details for the RPA and RDS offices can also be found here.

The next article in this series will look at the Higher Level Scheme in some detail.

New RPA customer service centre contact for enquiries on the single payment scheme 0845 603 7777

Award for Woodlands

Woodlands Farm has undergone an extraordinary change in the last eight years; what was once a high input, intensive all-arable farm in the Lincolnshire silt fens has transformed to become **Soil Association Producer of the Year!** Quite an achievement, particularly when you consider the fundamental changes that were needed to the whole system, everything from soil to customer.

Change is nothing new to Woodlands; during four generations this 690 hectare farm has led the way in UK potato production and many other aspects of conventional farming, including giving up livestock, while experiencing soil borne diseases requiring high use of agro chemicals and depleted organic matter. As is so often the case it was a new generation, in the form of Andrew Dennis, who made it all happen. Working with a Conversion Plan developed with the Organic Advisory Service the farm has converted progressively using green manures and leys, introduced an arable rotation including cereals, potatoes, root crops and brassicas, developed a turkey enterprise and set up a herd of Lincoln Red cattle. During the last three years a vegetable box scheme has been introduced, now supplying fifteen hundred local customers and sheep have just arrived. The result is a thriving business, one that also welcomes the public throughout the year on the farm trail.

Woodlands Farm is a member of the OAS Organic Systems Development Group; the aim of this group to continually explore how to become better organic farmers, not just become more profitable but to apply all the principles of organic farming. The advisory service provided to the group includes a "Sustainability Audit" or benchmark, which helps to assess how effectively the farm is delivering on the objectives of organic farming and sets a clear target for those areas that need improvement. The Audit proved useful in clearly showing to the Producer of the Year judges how successfully this farm is operating throughout the farming system including its wildlife populations, avoidance of pollution, food miles, high employment and manure management as well as the more familiar production, financial and soil fertility benchmarking. Wm. Dennis & Sons was also a founding member of the Organic Arable Marketing Company Ltd (OAMG)

Congratulations to the Woodlands team from all at EFRC! *Mark Measures*

Food Quality and Health: Concepts and Methodologies

An EFRC Conference last November contained a hugely significant UK first. A German research team headed by Angelika Meier-Ploeger has succeeded in gaining government approval for two innovative and holistic methods of determining food quality. This is a very important achievement as these methods - presented in their full, validated form for the first time in the UK at the conference - open up the possibility of holistically investigating the links between food quality and health. The conference also heard a comprehensive review of available mainstream methods.

EFRC advisor Laura Davis attended and was also present at our very first meeting on the subject in 1988. Here are her observations….

About 16 years ago, motivated by its concerns about food quality, EFRC held a Food Quality Colloquium at Sutton Courtenay in Oxfordshire, which resulted in the publication *Food Quality - Concepts and Methodologies.* At this meeting, presentations on novel methods of determining organic food quality, including fluorescence excitation spectroscopy and biocrystallisation methods, were considered by the invited delegates. A consensus was reached which agreed that any assessment of food quality or any claim of 'quality' should rest on scoring highly against six criteria: authenticity (which was thought to be important with the advent of genetic engineering); functional: biological; nutritional; sensual; and ethical (which included social and environmental considerations).

At the 2004 *Food Quality and Health - Concepts into Practice conference* at the Kindersley Centre, Sheepdrove Organic Farm, speakers revisited the ideas and methods that originated, at least in part, at the earlier colloquium. The conference opened with a short presentation from Lawrence Woodward, 'Towards Whole Food Quality', in which he argued that organic farming is the only farming system that has as its underpinning philosophy the achievement of positive health. This philosophy is captured in the words of Lady Eve Balfour who wrote, "the health of soil, plant, animal and man is one and indivisible" (Balfour, 1946). From this perspective, a narrow sensory definition of food quality is inadequate, and a definition of total or 'holistic' food quality is needed. But although such a definition has been formulated and set out, as above, it has yet to be widely taken up, and, although valuable, it does not address the core question of whether health is a dynamic state where its components are "one and indivisible".

The conference heard about the "notable progress" that has been made in using both mainstream and alternative methods in assessing some characteristics of food and their relationship to production methods, and considered questions arising from the potential to determine whether organic food does have an "extra quality" that may be important to health. If this is the case, how can we manage production and processing systems "on the ground" to consistently deliver this extra quality and improved health?

Kirsten Brandt of the University of Newcastle considered the relationship between production methods and food quality using mainstream scientific concepts. She pointed out that almost all research on food and health has focused on avoiding harmful extremes such as deficiencies or toxic effects, which means that we know almost nothing about the consequences for health of differences in food composition when it is clear that neither deficiencies nor toxic effects are involved.

Even given the immense difficulty of establishing causal relationships with measured characteristics (such as a modest change in dietary composition), it can be concluded that existing, generally accepted knowledge on this topic is clearly inadequate, indicating a need for development of new methods for evaluation of food quality. The question is then whether this should be done by a critical revision of the interpretation of existing and new data within the framework of existing scientific concepts, or if radically different scientific concepts are needed.

Distinguishing between good and bad science, and highlighting the resilience of "established scientific dogma" and the "continued struggle of reason against authoritarianism", Brandt argued for a constructive challenge to existing dogmas and paradigms whenever their predictions are "shown not to fit with actual observations"; that is located within the mainstream scientific concept; and which is built upon the same overall understanding of the laws of nature and generally accepted scientific principles.

Angelika Meier-Ploeger of the University of Kassel, who was one of the delegates at the earlier food quality colloquium, presented on complementary methods of food quality determination - their value and validation. Pointing out that when the term "quality" is used with respect to food, different value judgements are made by different actors or "partners in the market" such as

producers, processors, retailers and eaters.

Earlier scientific work in Germany, Switzerland and Britain, based on the premise that "the whole is greater than the sum of the parts"; that "life is bound to forms/structures and their maintenance; life is bound to light; life is linked to communication; life is reproduction"; leads to the necessity to verify the validity of these premises through the development and testing of new methods for the determination of food quality.

Presenting the results of a validation process for some novel, holistic methods, Meier-Ploger observed that such approaches in organic food quality analysis require a strict co-ordination, well defined samples, good sample storage and delivery, comparative samples, scientists "willing and able to understand the principles and language of alternatives", and scientists eager to discuss results and willing to argue about concepts and interpretation. Challenges exist to compare and correlate data from chemical analysis (e.g. of single nutrients) to those of the "holistic" methods, and questions need to be addressed as to whether these holistic methods do show more that 'the sum of different single nutrients from chemical analysis". And, perhaps most crucially, the challenge is to determine whether these "pictures, structures, forces and energies" shown by the use of holistic methods are important for animal and human health.

Jurgen Strube followed with a fascinating presentation of progress made with flourescence excitation spectroscopy (FES), one of the "holistic methods" considered at the earlier food quality colloquium. The method, which has clearly been refined and validated over the intervening years, is used to distinguish culture or growing conditions of plant samples. The sample is excited by light and the total light emitted by the sample is measured after the end of the excitation. The results clearly show that it was possible, under experimental conditions, to differentiate between fertilised and non-fertilised samples of carrots and wheat, and which sample were grown under mineral fertiliser and organic conditions. Using the same methods, it is apparently possible to differentiate between qualitative differences in other products such as seeds according to their culture methods.

Johannes Kahl then presented on 'characterisation of the biocrystallization method on using computerised image analysis'. This was also one of the methods discussed at the colloquium, and, as with the FES method, much progress has been made. The biocrystallization screening technique is based on the crystallographic phenomenon that when adding organic substances to an aqueous solution of dehydrate CuCl2, reproducible patterns are formed during crystallization. The technique has been applied successfully to comparative studies of the effects of different farming systems on crop and product quality. Recent efforts to standardise the method have included optimising the crystallization technique, and developing computer software for image analysis of the patterns, and the method has been tested and compared in laboratories in Germany, the Netherlands and Denmark.

Steve Hicks and Rafe Bundy of Reading University's Unit of Human Nutrition gave a brief perspective from a clinical nutrition perspective. Christine Williams, the head of the unit, is the author of one of the major literature reviews which suggests that there is no evidence that organic food is any healthier than non-organic food. While impressed by the previous speakers, Hicks and Bundy observed that from a nutritional point of view, the two methods "can't actually say anything about the food having an extra nutritional quality". Acknowledging that the methods can distinguish between different farming systems, they observed "we really don't know what it means, and we don't know at all what it means in terms of nutrition for organic or non-organic food." Clinical trials and intervention studies are, of course, difficult if not impossible in human populations, even if it were possible to measure "health". Apart from the difficulties in choosing which factors to measure, science is now beginning to discover the beneficial effects that a positive and healthy mind has on the human body.

Alex Smith of Alara Wholefoods observed that the morning presentations, while they had not shown clearly "the new virtues of organic food", did indicate that it was "more stress resistant, seems to have a better property for self-organisation and disease resistance than non-organic food". He considered that these three very important properties could be applied as organising principles to society itself. Organic agriculture is therefore an important and coherent approach that has a role in reforming society in a sustainable way.

Lynda Brown, a food writer, took an individualistic rather than a population perspective on food and health, based on her own experiences of growing and eating her own 'vital' fruit and vegetables, emphasising the choices made by consumers to eat healthily or unhealthily and the plethora of confusing nutritional advice. Suggesting that "as a nation, we are obsessed with health", she observed that "very few people bother to nourish themselves with the right kind of food that will not only

avoid bad health but will significantly encourage good health." Approaches that help consumers think about food in a more qualitative and holistic way "just might nudge them in the in a different and more constructive direction". However, this perspective does assume that all consumers are equal, operate on a level playing field, and that individual consumer choices will ultimately aggregate into better public health. This seems unlikely, given that people's access to healthy foods, and so-called choices about whether to consume such foods, are heavily influenced by economic, physical, cultural and social factors well beyond the individual eater's control.

The conference then moved on to a question and answer session, which began with one delegate commenting on the progress that has been made in developing and validating the methods discussed in the presentations. Comparing these to the limited Food Standards Agency (FSA) approach, which is reducing the characterisation of organic and conventional only to the source of nitrogen, and which is only one small part of the "system difference", the FSA approach was attacked as being a waste of public money, without any real explanation as to why this approach was being used. Meier-Ploger commented that although funding had been granted for further research into 'complementary methods', the timescale was too short to do proper work, "but that is how it is now for research". It was generally agreed that the need and ability to test for differences for a certification and control system for organic produce was different to the need assess the "value for health". One delegate commented that if the issue was food and health, the context is a completely different one. "It would be a pity if we start mixing up those things and start saying that one method is bad because it can't do everything, because it can't do everything because no method can do everything". Specific methods are needed for specific purposes.

In the context of a discussion on the nutritional content of organic food, and people's perceptions about this, a delegate from the McCarrison Society asked if we were being over-optimistic that the general public can think that organic is more nutritious, and better for us, when the majority of the population don't even make a connection between the general quality of nutrition and the quality of health. He also asked, "while we are agonising over which method of analysis is accurate, will the genetic modification movement negate everybody's efforts?"

There was general agreement with the observation made by Kahl that "it is very important that we succeed in going from the systemic approach in agriculture to the systemic approach in food quality analysis and a systemic approach in health." The matrix type approach was discussed and agreed to be valuable, in particular in countering the health claims of functional foods and 'nutraceuticals'. One delegate commented "there is nothing in nature ever that is presented without it being in the matrix form, that is, fully bonded". In a recent case in the US Supreme Court, it was "proven to everybody's satisfaction" that the food matrix form is closest to "what might be termed food of anything that is currently on the market", and until that is fully understood we won't be able to make the progress that is desirable.

To close the conference, Lawrence Woodward drew out the importance of the progress made with the mainstream and holistic or complementary methods, commenting that this "moves the organic sector significantly forward". What we are seeing for the first time, he observed, "is actually the fact that we can differentiate between farming systems in a way that science has never been able to do before, on a consistent and repeatable basis". But despite the aspirations of organic farming there are some "very poor" farming systems and some "atrocious" processing systems, which let us down in terms of meeting our aspirations. It is time to get a handle on the link that we believe is there between the life in the soil, linking the life and vitality of plants right through animals and into humans. The need is to roll out the methods discussed and meet that challenge, which will be an immense job because of the variability in the system.

"Let's be clear," Woodward stated, "chemical industrial agriculture is not built on any concept of health; it is not based on any concept of interconnectedness with health whether soil, plant, animal or man. The one system of agriculture that aspires to build its world-view on those issues is organic agriculture.

There may be some differences in approaches to methodologies, but what we all believe or share is the perspective that production methods - how we produce food - is critically important to not just our own health but the health of all the other organisms on this planet". This concept is so important that it should drive a wide range of policies, be framed in legislation, be the organising principle of commerce and trade and the basis of our social organisation.

The Conference Proceedings may be found on our website www.efrc.com from 11th April 2005.

EFRC in 2005

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