

CIWEM

Farming, Water and the Environment *Communicating lessons into practice* **November 22nd, 2006**

SOAS, London

Diffuse pollution - Nutrients - Pesticides - Bacterial contamination of rivers - Bathing Beach failures - Organic pollution - Siltation of salmonid streams - Muddy floods - Soil erosion - Enhancing the biodiversity of rivers and wetlands.

All of these issues require the effective delivery of farm scale practice.

The aim of this conference is to concentrate on farm scale delivery and in particular how our rapidly expanding understanding of available solutions can be translated into effective action. Communicating this fast developing knowledge base on the scale required is a major challenge to both advisors and farmers and will be the focus of the conference.

IF you would like to sponsor this event contact Justin Taberham of CIWEM on 0207 831 3110 or email him on Justin@ciwem.org

**A Conference for CIWEM The Chartered Institution of Water and Environmental Management
Organised by CMS – Coastal Management for Sustainability**

**Please pass this programme to colleagues
who are interested in this theme**

Welcome to the conference

This information gives the answers to some of the most frequently raised questions that arise at the conferences we organise.

Conference Outputs

- **Key Lessons** – Feedback to delegates. We have designed the day to cover a number of key ideas and see what lessons can be taken from these. We would like to capture your thoughts on the coloured sheets at the end of these delegate notes. The final sheet asks for next steps and actions that you think should follow from the day. We will type these and make them available to you after the event.
- **The Power Point presentations** will be available shortly after the event on websites www.coastms.co.uk. We will notify you by email when these have been placed on the sites.

Questions If you have any questions during the event about bookings, finances, or logistics please see Christina Beech at the registration desk; she will be pleased to help.

Timing We will try to ensure that the conference runs on time to allow the allocated time for speakers and as importantly for discussion. A bell will be rung 5 minutes before the start of sessions.

Refreshment Breaks In running events in London over the last 10 years we have used two main refreshment breaks during the day that enable us to split the sessions and breaks more evenly. A sandwich buffet is available in the first break and sweet course during the second.

Food There is always ample food at the events and you can come back for more. Once you have collected your food could you move away from the serving table. Catering staff are on hand if you need anything, including extra drinks.

Evaluation form There is an evaluation form at the end of delegate notes; your views will help us improve future events. Please leave these at the registration desk along with your badge when you leave.

Valuables If you have anything you value keep it with you i.e. do not leave laptops unattended.

Before you leave Check you haven't left anything in the conference hall. Please also take any leaflets or reports.

Background

There is a growing awareness among the water industry, regulators and the environmental sector working with water issues of the need to work much more closely with farmers and land managers. Many of the issues surrounding farming, water and environment are fundamental to and closely integrated with farm operations and land management; these issues include:

- diffuse pollution
- bacterial contamination from stock, bathing beaches and organic pollution
- enhancing salmonid populations, biodiversity (on land and adjacent water) and ecological status
- muddy floods, siltation of streams and rivers and soil erosion
- flooding, hydromorphology, wetland function, water resources and droughts

Work on these issues can now be set in a developing convergence between the main policy drivers in particular the Common Agricultural Policy and the Water Framework Directive, and a host of other policy initiatives e.g. Nitrates Directive. Conceptually two scales have been used to try and achieve changes and the water industry is particularly geared to the catchment scale solutions, however, it is also very clear that **farm scale delivery** is of crucial importance and this is being increasingly recognised by water and environmental organisations in their programmes.

For the water and environment sector used to major capital expenditure in infrastructure there are now a wide range of alternative options available that involve working much more closely with farmers and land managers. Despite the scale of some of the challenges there is evidence that even simple measures can make a profound difference to water, land use and biodiversity issues. There is a gathering body of information from various demonstration projects on *practical measures* that make a real difference.

There are range of expensive interventions in terms of investment and enforcement but there is a **strong area of common ground** between those from the land use/farming and water/environment disciplines that see **advice to farmers** as a critical first step. This meeting will focus particularly on the issues of providing this advice effectively.

The aim of this conference is to focus on **farm scale delivery** and the current water, environmental and agricultural environmental agenda, how this can be delivered more effectively knowing what works. A number of carefully selected **objectives** have been drawn-up to structure sessions during the day; these include:

- Understanding the farmer / landowner perspective of farming, water and environmental issues – the policy context and the reality on the ground [now and in the near future]
- Clarifying the need for more effective integration between water and agricultural initiatives and organisations – regulation v advice and voluntary initiatives – what do we want farmers to do?
- Clarify and understand the benefits of integrated, whole farm solutions
- Highlight the diversity, scale and range of information / advice [including innovations] available across the evidence base and challenges to communicating this
- Highlight our knowledge of behaviour change in this sector for **both** farmers *and* delivery organisations [what works/ effectiveness of measures – psychology and communication
- Understand the issues of communication in the farm setting
- Highlight the major challenges that remain – pick up on issues raised during the day
- Networking: to facilitation closer UK links between agricultural and water sectors working at this scale

The conference will be introduced and concluded by **Andrée Carter** from ADAS

Programme

09.00 Registration and refreshments

09.45 Session 1 Welcome to the conference on behalf of CIWEM

09.50 **Introduction to the conference** **Andrée Carter** ADAS

A series of carefully selected objectives have been used to structure the day in relation to 7 sessions outlined below. There will be a 50-50 split between presentations (2 x 10 minute presentations) and discussion so that important issues can be highlighted and developed as the day goes on.

10.00-10.40 Session 1 Understanding the farmer / landowner perspective of farming, water and environmental issues; the policy context and the reality on the ground

Anna Hall NFU

Harry Johnson A farmer's perspective

10.40-11.20 Session 2 Clarify the need for more effective integration between water and agricultural initiatives and organisations in relation to advice and voluntary initiatives, and other mechanisms

Jane James Environment Agency – The tool kit – diamond model

Ciaran Gannon Natural England - 'Advice and incentives for farm-scale delivery'

11.20-12.00 Session 3 Whole farm solutions – holistic solutions - clarify and understand benefits

Dan Houseago National Trust

Charles McCall Whole Farm Approach Programme, Defra

12.00 – 12.45 Break 1 Buffet Lunch

12.45 – 13.25 Session 4 Chairman - **Darren Moorcroft** RSPB

Advice for farmers and advisors, highlighting the diversity, scale and range of information / advice [including innovations] available across the evidence base / Water4all – Guidance handbook, Defra User manual etc

Brian Angell ADAS

Bob Harris Environment Agency

13.25-14.05 Session 5 Highlight our knowledge of behaviour change in this sector for both farmers and advisors (delivery organisations); what works/ effectiveness of measures – psychology and communication

Carol Somper ADAS

Jo Oborn FWAG

14.05 – 14.45 Break 2 Chairman **Andrée Carter** ADAS

14.45 – 15.25 Session 6 Challenges of communication in the farm setting

Luke deVial & **Nikki Downton** Wessex Water

Ross Cherrington West Country Rivers Trust

15.25-16.00 Session 7 Concluding Discussion: Highlight the major challenges that remain, the issues and ideas raised during the day and how they can be resolved and/or taken forward

Andrée Carter ADAS

Farming Water and the Environment Conference

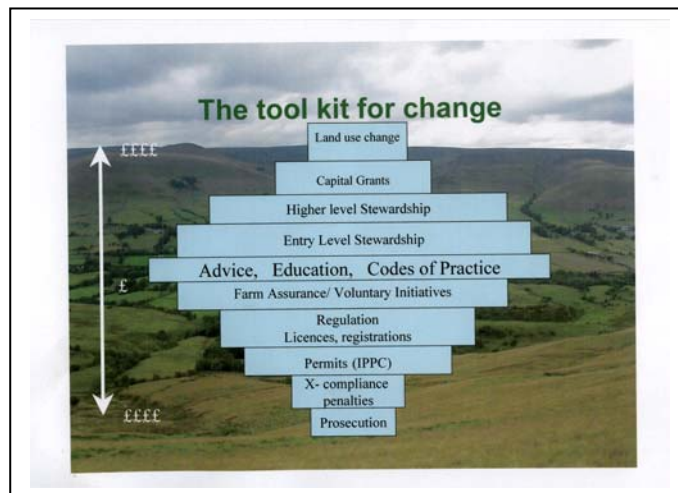
Background and Key Ideas

CIWEM has run a number of conferences recently that have begun to focus on the importance of both catchment and farm scale delivery. Presentations and delegate notes from these events are on the CIWEM and CMS website [see Information box 1 below]. Whilst catchment scale operations are fundamental to the way the water industry thinks many really inspiring projects are pointing closely to the need to look at **farm scale and land management solutions** to issues challenging the water and environmental sector.

Key ideas

The *convergence* of policies like CAP and WFD and host of other environmental initiatives and programmes are prompting people to look afresh at farm scale delivery. For example the water Industry are exploring in considerable detail the value and cost benefit of investing in such approaches.

The tool kit approach (Fig 1) taken from a presentation by Helen Wakeham of the Environment Agency illustrates clearly the **common ground** between the traditional land use and the water/ environment sectors. Both approaches see advice and education as the starting point with farmers and land managers.



So, in addition to the traditional land management advisors there are now a growing number of project and catchment officers from water and environmental organisations working in the land management and farming setting.

Many of the successful projects are generating considerable amount of valuable information which begs the question about how effectively this information is being passed into practice.

For this conference, rather than covering the policy context or project/case study led approach [covered in previous events], we have opted for a very much more focused event – with clearly defined objectives - in order to explore in detail the generic issues surrounding effective delivery at a farm scale especially in relation to the role of advisors and effective working with farmers and land managers.

While recognising that the provision of effective advice is not the last word or only solution to many issues, effective delivery of a wide range of solutions with relatively limited investment

can produce some very impressive 'quick wins'. If these ideas could be implemented widely through the effective dissemination of the growing body of knowledge from projects there could be some very significant gains for farmers and land users as well as the wider water and environmental sector. The considerable number of routine contacts by 'advisors' with the farming and land use community also represents a very considerable opportunity to achieve 'quick wins'.

This conference assumes that delegates are up to speed on the broader issues of policy [see information Box 1] and that we can concentrate on exploring and developing issues surrounding the effective organisation and delivery of advice.

The scene will be set by Andrée Carter of ADAS, and then move on to look at the farming / land management perspective. This is a time of enormous changes to the sector and it will be important to set the scene (session 1) to have both an industry wide and an individual farmer's perspective of both the context, constraints and opportunities currently operating; what are farmers looking for?

The **toolkit model** and the common ground (Fig 1) The activities identified in the EA toolkit and their uptake /implementation are key to the discussions of the day with respect to both the water/environment and land use/farming perspective. The common ground of provision of advice may well provide many more opportunities / synergies than we realise (session 2).

Conceptually most farmers and land managers have a holistic and integrated view of their operations and property, that is to say, a view of *the whole farm* and its management (session 3). This idea is gaining currency as an important and practical idea not least to advisors. One challenge is that initiatives and projects (and advisors) often only come with a restricted range or single issue packages.

Session 4 will look at the challenges posed by the growing body of work – demonstrations, case studies, EU funded projects, as one speaker said '*projects, too many to catalogue ...*'. Is this information being used effectively, how is this information going to be made available, does greater effort need to be put into the information transfer agenda? Are there common messages we need to communicate? What do we want farmers to do?

Session 5 will look in detail at the behaviour change. We have started to explore what works in terms effecting behaviour change in farmers (what works in practice), but if we are to realise the benefits of synergy between the farming and water sector there will also have to be a behaviour change in those providing the advice.

Session 6 will explore the practical challenges of actually working in the farm setting, what works, what mix of advice and incentive, what needs to be done in practice.

While we have clearly broken the day up into a number of discrete sessions, many themes will run continuously through the day. We will pull this together in the final session to develop conclusions from the day so that the agenda can be moved forward and progress made more quickly.

Information Box 1

CIWEM supported by CMS have run a wide variety of conferences that set out the wider policy and detail context for this conference. You can download this information from the folders on the particular conferences. If you visit www.coastms.co.uk go to the conference folder and click on conference outputs and reports. If you view Agric Diffuse 2005, Catchment Management 2006, Land-use and Water 2004, Water and Soil 2005, Diffuse pollution 2005, WFD June 2006 you will find many papers covering policy and catchment issues.

Understanding the farmer/landowner perspective of farming, water and environmental issues; the policy context and the reality on the ground

Anna Hall

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Farmers play an important role in looking after the environment. The NFU appreciates that their expertise can be used to protect and even enhance the environment. Environmental responsibilities also need to be set in a wider context of issues of which farmers are concerned. The NFU supports the idea that profitable farming businesses are the cornerstone to environmental improvements and changes on farm. We need to ensure farmers are able to be profitable and therefore the environment can benefit, we consider this is the only way to have sustainable agriculture, rural communities as well as countryside.

Recent changes, such as CAP reform, cross compliance requirements and Environmental Stewardship all help farmers to put environmental issues higher up their agenda. Other initiatives such as the Voluntary Initiative have tapped into real enthusiasm and a desire to make a difference. Farmers have always been facing up to challenges, whether it is the challenge to increase production after the second world war, day to day challenges with weather conditions or even recent environmental challenges there are ways in which farmers, and land managers can succeed, with the support and partnership working to achieve the goals of good local food production with low environmental impacts.

A Farmer's Perspective

Harry Johnson

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Farming is under a number of pressures to a degree never before experienced. First is the pressure to remain profitable and stay in business as energy, labour and input costs rise whilst product revenue generated at best lags behind or, in real terms, falls. Second is the pressure of time: as more people leave agriculture those remaining fall under a greater burden simply to "get the job done". Third is the pressure to widen the skills base and become competent in new areas as farmers diversify into different crops, different environmental schemes, and even different enterprises to generate new income streams. Fourth is the pressure to understand and implement the tsunami of fresh regulation, both mandatory and voluntary.

Against this background come heightened expectations of farmers' environmental performance. The bland statement that the majority of rivers and groundwaters in England & Wales will fail to meet WFD objectives by 2015 due to diffuse pollution (much of it agricultural in origin) is not a damning indictment of current performance, but an indicator of how far the bar has been raised. Farmers are generally technically competent, take pride in a job well done, and are open to receiving sound practical advice. The issue is how that advice is delivered, and the answer is not to swamp already time-pressed farmers with a stream of well-meaning "advisors", all with their own agenda's. Environmental improvement cannot be delivered without the engagement of the farming industry, which needs to continue to be profitable and needs to conduct its core purpose: producing food.

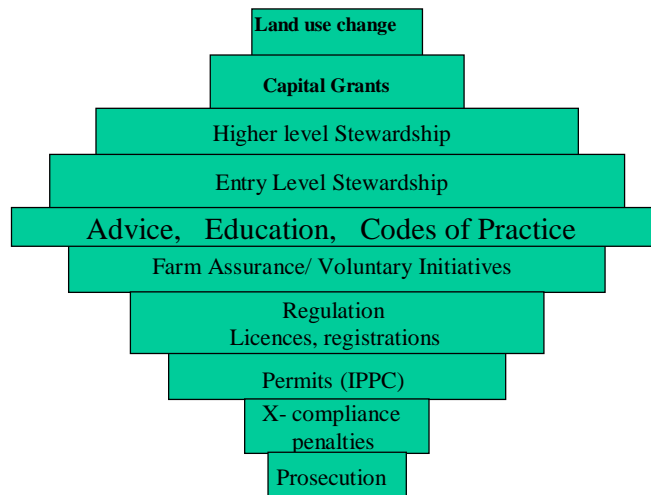
The Diamond Tool Kit

Jane James

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In the past EU and national policy for farming has led to a culture of production, regardless of need or the impact on our water and soil, our landscape, our wildlife. In short - our environment. Today the policy landscape is changing, as is farming practice, and now you will see fields with buffer strips around the edges; new woodland and fields that are not quite so tidy. Much better suited for birds and native wild plants. What is not so recognisable perhaps is the quality of our surface and ground waters and the effect that individual farms have on water quantity and quality. To achieve the objectives of the Water Framework Directive we know that farmers must change their practices to reduce the pressure farming places on the environment. Many already have, such as those affiliated to LEAF, and are rightly proud of their achievement. Many still need to change.

The Environment Agency has, at its core, a regulatory remit. However, we do not believe that we can achieve sufficient environmental improvement by regulation alone. We want to improve land management practices, and so environmental quality, through a mix of regulation, advice and incentive. We want to see incentives used to reward land management that produces environmental goods for public benefit. We want to see good advice given to those who listen and will adapt their practices and regulation used where incentive and advice are not heeded or are not enough. But the balance and mix of these elements should be regularly reviewed according to the response we are seeing.

The need for effective integration between water and agricultural approaches and organisations in relation to advice and voluntary initiatives

Ciaran Gannon

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The policy context for our current approach to farming is now radically different from a few years ago when public money was being used for producing food. There is now a clear emphasis on payments for environmental work within the CAP and this approach is being reinforced by moves and convergence with work on the Water Framework Directive. What farmers are paid for in the future is also likely to change and it might include flood mitigation, combined heat and power, energy crops etc.

This presentation will highlight

1. **Policy shifts and advice needs:** The challenges the farmer faces today are more demanding than at any time since the post-war period when government policy was clear and understandable i.e. food production for our own resources. Government policy today revolves around sustainability, but the concept of sustainable land management (and the implications of the decoupling of subsidies from production) is not easily understood by farmers.
2. **The pace of change:** when the world is changing very slowly, you don't need much information. But when the change is rapid, then there is a premium on information to guide the process of change... .
3. **Better information and advice:** Farmers often do not clearly understand what they are being asked to do, or why they are required to keep certain records. They are concerned about whether they are complying fully with regulations. Often the problem is not too little information, but too much.
4. **Interpretation and Integration:** Farmers are not able to interpret clearly what they need to do because that information is seldom presented using language that easily relates to the tasks involved in farming. Advice to farmers comes via a number of different organisations and in many different forms. At worst messages can be contradictory and the advice may not be tailored to farmers' needs.

Whole Farm Planning: The development and future of farm scale delivery on the NT's farmed estate

Dan Houseago

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The National Trust is responsible for over 240,000 hectares of land in England, Wales and Northern Ireland. Over 80% of this area is farmed under tenancy agreements and grazing licences. The National Trust has recognised a need to improve environmental practice across its agricultural estate, using the process of whole farm planning as a means of encouraging and implementing beneficial practices on the ground.

The aim of *whole farm planning* is to contribute to the environmental principles of the Trust set out in the National Strategic Plan, 1998.

- *To minimise the adverse impact of the Trust's work on the environment*
- *To resist external environmental factors which impact on the Trust and*
- *Wherever possible to act as an example of good environmental practice*

The process is also recognised as one of the key mechanisms for delivering the National Trusts Agricultural Policy, *2000 and Beyond*. In addition to environmental issues concerning land management, the process also identifies relevant rural development opportunities for rural businesses including food production and marketing, diversification, training, investment requirements and grant aid.

The single most important factor is developing good communication. Farms and associated businesses are complex and subject to rapid change. Whole farm planning is far more than just producing a document at a point in time. It should provide clear understanding with agreed objectives and identify opportunities as they arise. Progress is checked by frequent review, and revisions made as an ongoing process, to result in progressive and measurable improvements on the ground.

Since 1999, the Trust has employed Farm & Countryside Advisers (FCOs) across England, Wales and Northern Ireland to deliver Whole Farm Planning. Experience gained from their work is enabling the development of the planning process in line with increasing emphasis on skills development and risk assessment methodologies.

The Whole Farm Approach

Charles McCall

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The Whole Farm Approach (WFA) is a long-term Mission Critical Programme that is part of the Sustainable Farming and Food Strategy and "Delivering the Essentials of Life, Defra's Five Year strategy". It has been referenced and upheld as an example of best practice in the Hampton review and it also features as a key Defra initiative in meeting the Transformational Government agenda and contributing to the 25% reduction in the administrative burden of regulation.

Over time, the WFA will significantly reduce the bureaucracy farmers currently face. By streamlining regulation and offering a range of innovative online services the whole process of dealing with government will become more efficient and user friendly, ultimately providing a range of benefits that will help to support a sustainable food and farming industry. The WFA has been, and continues to be developed with full industry involvement and support.

Data gathered through the WFA is being shared with a range of regulatory bodies including: Rural Payments Agency, Environment Agency, Food Standards Agency, Health and Safety Executive, Natural England and English Heritage. It forms the only e-channel for the submission of the Environment Agency's waste licence exemption notification and environmental management system for farmers.

Amongst the key objectives are:

- Providing guidance and advice in a way that helps farmers achieve compliance.
- Streamlining and targeting enforcement activity on the basis of risk.
- Delivering a new way for farmers and regulators to work together to minimise regulatory burdens and maximise benefits.
- Fostering a new, customer-focused relationship with farmers.
- Delivering a faster and more efficient way of doing business between Government and the farming industry.

Future development of the WFA is already underway and a range of options for adding value to the industry, enhancing usability and including additional transactions will be a part of development in 2007.

Whole Farm Approach Website
<http://www.defra.gov.uk/farm/wholefarm/index.htm>

Advice for farmers and advisors

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Information and advice are vital tools to help in the achievement of policy objectives. They have different characteristics and using this knowledge in the different stages of decision-making is crucial. Issues relevant to the supply of information include: access by potential users to available sources of information, effectiveness of sources in communicating information to users, ease of use of sources, co-ordination and integration of sources, to enhance access and usefulness; targeting of information to different categories of user, through audience research, testing and feedback, matching of content and format to the nature of decisions that may be taken.

Advice however implies the recommendation of a particular course of action, or the presentation of a range of alternatives. This can either be a blanket recommendation for all members of a particular group; or tailored to the specific circumstances of the land management unit. Issues relevant to the provision of advice include: the number of options presented to the decision maker, the degree to which the advice includes an assessment of advantages, disadvantages and range and probability of different outcomes, whether the advice provider includes continuing support during implementation of the advice.

The wide range of sources of information and advice available to advisors and land managers poses challenges not only for them, but also for those who set and manage the government's policy objectives in relation to minimising the negative environmental practices of farming on our water assets. The conceptualisation and practice of knowledge transfer has evolved and broadened in to one that is demand rather than supply led. This raises questions whether the role of the public sector is in stimulating supply or demand for advice and information. At the end of the day the key must be to empower the key actors in land management decision-making.

The presentation draws upon a range of research carried out by ADAS and others into information and advice provision, ADAS practical experience of delivering environmental and pollution related information and advice programmes – including the Environmentally Sensitive Farming, Conservation, Farm Business and aspects of the England Catchment Sensitive Farming Initiative - and ADAS experience of developing and delivering decision support tools. Key reports and websites include:

Angell, B.; Garforth, G.; Scott, T.; Beedell, J.; Bailey, A.; Beechener, S. (2004) Evaluation of the Forward Farming Pilot Demonstration Farm Project Report to Department for Environment, Food and Rural Affairs (Defra).

Garforth, G., Angell, B., Archer, J. and Green, K; Improving access to advice for land managers: a literature review of recent developments in extension and advisory services; DEFRA Research Project KT0110.

<http://www.defra.gov.uk/rds/farmadvice/ecsfdi/links.htm>

<http://www.environmentalsensitivefarming.co.uk/>

<http://www.defra.gov.uk/rds/farmadvice/ecsfdi/default.htm>

<http://www.uk-adapt.org.uk/home/>

<http://www.crosscompliance.org.uk/>

Water4all – Guidance handbook

Bob Harris

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The Water4all project aimed, through the sharing between partners of their extensive experience in implementing land-use change & stakeholder engagement to:

- Integrate water quality protection & management into the context of local and regional land use planning;
- thus help deliver an integrated approach to spatial and land use planning and groundwater management, by matching land use to soil and groundwater vulnerability;
- develop and publish a Guidance Handbook, using the amalgamation of results of small-scale implementation schemes and experiences of all the partners in using specific measures.

Through a series of workshops, networking and field visits, the four partner countries (Denmark, Germany, The Netherlands and UK) developed a handbook containing a methodology for risk-based land and water management to reduce diffuse pollution of groundwater from agricultural sources. Best practice guidelines were catalogued as a matrix of compensated and non-compensated 'soft' to 'hard' measures and were supported by illustrative case studies.

The only real sustainable solution is to base land use on the vulnerability of soils and aquifers in groundwater catchment areas – ***a risk based approach to land management for the protection of groundwater***. This needs to be carried out through a spatial planning process that considers agricultural land use in the context of ground water protection. The approach is based on the philosophy of preventing pollution at source, and thus avoid costly and unsustainable "end-of pipe" treatment.

The Water4all-handbook of best practice provides a general framework for advice on how to incorporate groundwater protection from agricultural impacts into an overall planning process. This will be a necessary part of the Water Framework Directive's River Basin Planning process and the Programmes of Measures (PoMs) that will need to be drawn up. The handbook includes a survey of the measures available, which have been proven to work elsewhere in Europe and which can be recommended for different locations with varying climatic conditions. The process of deciding upon a measure is firmly based on a sound understanding of the environmental conditions. Every catchment has its own approach and therefore it is necessary to understand the system in order to choose suitable and effective measures.

The Handbook is available for download in two parts from the project website www.water4all.com and has already been distributed to Catchment Officers and similar professionals working on agricultural issues at the catchment scale.

Changing behaviours: What works for advisors and for farmers

Carol Somper BSc. MSc.

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Advice and information to put farming on a more sustainable footing gets to farmers in a wide variety of ways. Government funds the delivery of this advice directly through its own agencies and also through a range of commercial and charitable organisations, like FWAG. We know that tailoring advice to meet local circumstances is vital, particularly when no two river catchments are alike, and neither are farming communities. So what works best? How is this substantial investment in changing land management practice, whilst helping to make farmers more profitable, actually delivering on the ground?

The evidence shows that farming clients want advisors who have credibility, i.e. perceived expertise and objectivity. Advice that helps favour the development of local solutions and strategies is particularly effective. The growing trend towards more 'client-driven' advice means that advisors must be confident and well-trained in facilitating learning, conflict resolution and all-round communication. However, recent evaluation studies have shown that advisors often lack the confidence they need, so training and knowledge transfer works both ways

This presentation will summarise recent research and evaluation studies that help to answer these questions and provide insights about how strategic policies can be effectively delivered on the ground.

Behaviour change, farmer and advisors; what works – psychology and communication

Jo Oborn

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Agriculture occupies more than 70% of the land area in England, it should not be surprising that this industry accounts for a significant percentage of the silt, nitrogen and phosphates entering watercourses as diffuse pollution. By its very nature, the causes of diffuse pollution sources are often discrete and are often dismissed, if acknowledged at all by the land manager.

With environmental challenges such as climate change and the EU Water Framework Directive water and environmental issues have become more significant in recent years with increasing pressures on water quality and flood prevention.

Recognition and understanding the problem is paramount to the process of change. Farmers need to be able to identify the 'cause and effect' process, before changing management practices to minimise the adverse impacts on the environment.

On a catchments scale it is important to identify the main issues, before trying to engage and work *with* landowners.

The process includes;

- Recognition of the problem
- Exploration and understanding of the process
- Ownership
- Before change

Challenges of communication in the farm setting - Catchment Management - An Alternative to Water Treatment

Nikki Downton

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Eighty percent of the water supplied to customers in the Wessex Water region comes from groundwater. Over the last 20 years there has been a gradual increase in both average and peak nitrate concentration at several public water supply groundwater sources within the region. In the past Wessex Water would have put in treatment to remove nitrate but this is costly. It has been estimated that to build and run a nitrate removal plant equates to £275/ha per annum for every hectare within that groundwater catchment. This is unsustainable in the long term.

Wessex Water decided to tackle nitrate pollution at source rather than with traditional end-of-pipe solutions.

Initially Wessex Water decided to concentrate on one catchment, the Empool public water supply borehole catchment. The aim was to halt and reverse the upward background trend in nitrate levels and reduce the seasonal peaks by working closely with landowners to reduce nitrate leaching at field level. The employment of an additional catchment advisor and also through the involvement with the WAGRICO project the work has now been extended to other catchment areas within Wessex Water.

The Empool groundwater catchment covers approximately 8000 hectares. This represents a small part of the total surface water catchment of the River Frome and this allows us to work in a very focused way within the groundwater catchment.

Initially contact was made with the landowners. Our issues and aims were explained and requests for their assistance in providing historical farm data and access to their land for data collection were by and large favourably met.

It was important at the outset that the actual groundwater catchment be defined and a baseline set for the water quality within that area. This was done by intensive monitoring of groundwater levels and quality in a monitoring network that comprised purpose-built monitoring boreholes and numerous private boreholes and wells.

Data provided by the landowners allowed the identification of changes to farm enterprises or upward trends in organic or inorganic fertiliser use.

We then went on to identify areas of concern such as variable standards of farming practice, intensive dairy units (spreading of slurry/ manure onto stubble fields during winter months due to lack of storage), spreading of dirty water in vulnerable areas, outdoor pigs on bare ground on fields in close proximity to Empool source, high nitrates in private boreholes drilled on site near to manure storage, private boreholes situated in dairy yards and unlined slurry and silage pits.

This detailed analysis has allowed us to categorise farms into low, medium or high risk. Our close relationship with the farmers means that on those farms which are medium or high risk we have been able to suggest alterations to farm practices such as reduction in inorganic

fertiliser use by taking into consideration organic manures and soil mineral nitrogen (Planet), improvement in soil management (SMP's), adoption of resource protection measures under

ES (limited options), change in cultivations, altering drilling dates of autumn crops, the use of catch crops, changes in use of organic manures (manure & nutrient management plans) and nutrient balancing.

To provide a solid science based approach to changes in farm practices the Catchment Advisers carry out intensive on-farm data collection including soil sampling for P, K, and soil mineral nitrate, nitrate sampling in rivers, springs, public supply and private boreholes and wells, in leachate leaving the rooting zone of crops and in the actual crop. All this information is passed back to the farmer. In cooperation with the farmers and using the locally derived data, they work up management plans (soil, manure and nutrient) for each individual farm, FEP's and farm nutrient balances. The WAGRICO project is now making funding available to farmers for drilling of catch crops, provision of farm information and change in use of manures among others.

Farmers within the catchment are taking an interest in the issues and provide access to land and private boreholes. They have shown themselves to be willing to provide information, to listen, to request help with management plans and ES applications (as well as other issues e.g. waste management), and, importantly, to use soil, slurry, manure and crop tissue sample results to adjust their fertiliser programs.

Our key indicators of success will include buy-in from farmers, reduction in nitrate levels leaching from the soil zone (measured in porous pots) and local groundwater (boreholes), increased area of catch crops grown on over wintered stubbles, reduction in post-harvest soil mineral N, cessation of winter application of slurry/manure/dirty water to fields, reduction in use of inorganic N and, ultimately, the reduction of nitrate levels at Empool groundwater source.

The key to the success of the project is the one to one contact with landowners, the generation of site specific data rather than county wide data, feedback to farmers, the economic savings that adjustments in practice will produce and, most crucially, the building of trust. Without the trust and cooperation of the farmers, Wessex Water will not be able to achieve its desired objective of not having to install treatment at any of its groundwater sites.

Challenges of communication in the farm setting

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The Westcountry Rivers Trust (WRT) is an environmental charity (Charity No: 1045806) established in 1995. A cornerstone of our philosophy is working in partnership with external individuals and organisations to share expertise and facilitate better information transfer. By collaborating with a whole range of stakeholders - ranging from individual businesses through to academic institutions, NGOs and government departments - the Trust aims to circumvent sectoral interests and encourages joint solutions to the complex environmental problems our society currently faces

The Trust has delivered several multimillion pound catchment scale land advisory projects in the last 10 years. The projects have delivered over 250 km of river restoration, over 80 000ha of improved land on over 1000 farms, among many other achievements. Monitoring of projects has shown that Trust advisors have had a greater than 80% uptake rate for visits based on cold calling. What is the key to success? We feel that adopting an Ecosystem Approach is the key.

Many people assume that to apply an ecosystem approach, first you have to define an ecosystem in a scientific manner but in this case the ecosystem is defined as the sum of all the economic, social and environmental factors driving the environmental problem under scrutiny. The key advisory principals arising from the application of an Ecosystem Approach and many years experience are:

- We listen and don't judge
- We offer confidentiality, vital to point one
- We are non-regulatory, vital to point two
- We are experienced in farming
- We are local
- We work on a one to one basis
- We work on a whole catchment scale. This could be refined but we have found that the accurate targeting of advice would cost vastly more than blanket delivery and the endless pursuit of ever more elegant methods of targeting advice is very often the reason why there is so little delivery.
- We present win-win solutions and grant-aid more marginally profitable recommendations.
- The profitability of the farm will usually be unaffected or increase as a result of our guidance.
- We cut costs by managing wastage at the front end and back end of the business.
- The Whole Farm Plan produced is simple short and concentrates on three to five main opportunities to 'profit from change'.
- We cold-call to ensure we reach more than the usual suspects who attend centralised meetings
- We try to present a consistent presence rather than a project that finishes after a finite, usually quite short period of time.

UNESCO, IUCN, RAMSAR, WWF and the Secretariat of the CBD compiled a list of 26 case-studies of the implementation of Ecosystem Approach. WRT projects are given as the UK example of success (CBD, COP-5; 2000).

**Farming, Water and the Environment
Communicating Lessons into Practice
November 22nd 2006, SOAS, London**

Meeting Evaluation

1. Name: _____ Phone No: _____

2. How valuable did you find the meeting? (circle)

Not valuable
valuable

Very

1

2

3

4

5

3. What would you do to improve the event?

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Please leave the completed evaluation at the end of the event
Or return to CMS by fax on 01531 890415

Farming, Water and the Environment

Communicating lessons into practice

Session 1 Understanding the farmer / landowner perspective of farming, water and environmental issues; the policy context and the reality on the ground. Please give your key points

Session 2 Clarify the need for more effective integration between water and agricultural initiatives and organisations in relation to advice and voluntary initiatives, and other mechanisms – the 'diamond' toolkit

Please give your key points

Session 3 Whole farm solutions – holistic solutions - clarify and understand benefits

Please give your key points

Farming, Water and the Environment *Communicating lessons into practice*

Session 4 Advice for farmers and advisors, highlighting the diversity, scale and range of information / advice [including innovations] available across the evidence base / Water4all – Guidance handbook, Defra User manual etc

Please give your key points

Session 5 Highlight our knowledge of behaviour change in this sector for both farmers and advisors (delivery organisations); what works/ effectiveness of measures – psychology and communication

Please give your key points

Session 6 Challenges of communication in the farm setting

Please give your key points

Farming, Water and the Environment

Communicating lessons into practice

Concluding Session

You have heard the presentations and discussions,
what key actions do you think should be taken and
by whom?

Name _____ Phone _____

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