

Farming and Water Resource Protection

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The background of the slide is a solid blue color. In the lower right quadrant, there are several faint, concentric white circles that resemble ripples on water, creating a decorative effect.

Drivers

- Article 7 – no deterioration
- Government policy – Water White Paper
- Carbon footprint
- Food security – rising populations, greater *per capita* demand and climate change
- Wider range of benefits – ecosystem services

Agricultural issues for drinking water

- Nitrate
- Pesticides
- Crypto
- Colour

NO STATISTICS!

The bottom of the slide features several concentric, light blue circular ripples that resemble water droplets hitting a surface, set against the solid blue background.

Business As Usual (BAU)

- What will be delivered without taking new action?

eg nitrate

Nitrate trends in surface water

- Analysis of EA surface water data by Glasgow University
- General falling trend since about 2000
- Pre-dates NVZ measures
- Nitrate stripping at STWs
- Is there reason to believe groundwater will be different (apart from STWs)?


Nitrate – what's in the pipeline?

- More stringent NVZ Action Programme came into effect in 2009 in existing NVZs and in 2010 in new ones.
- But these have limited effectiveness (1-5 – 8.5%, Defra) and may be much less important than industry trends

Nitrogen fertiliser use

- Inorganic fertiliser use – 39% reduction over 20 years
- Organic fertiliser (manures) – similar reduction due to continuing decline in all livestock classes except poultry (where majority of manure goes to power generation)

Where action is needed ...


- Engage with farmers
 - Identify and characterise the problem, source apportionment etc
 - Even-handed approach addressing all sources
 - Assess uncertainty
 - Identify and assess options
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Assessing the options

- Scale of impact sought
- Targeting
- Cost-effectiveness
- Proportionality



Measures – diffuse pollution inventory

- Land use change
 - Soil management
 - Crop and livestock breeding
 - Fertiliser management
 - Livestock management
 - Manure management
 - Infrastructure eg slurry storage
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Mechanisms

- Government policy:
- Advice
- Incentives
- Regulation: Water Protection Zones (last resort)

Government hierarchy of measures

- Advice
 - Incentives
 - Regulation (last resort)
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- A decorative graphic in the bottom right corner of the slide, consisting of several sets of concentric circles in a lighter blue shade, resembling ripples in water.


Examples of Advice

- Catchment Sensitive Farming Delivery Initiative (Government)
 - Voluntary Initiative for pesticides (Industry)
 - Campaign for the Farmed Environment (Industry)
 - PLANET Nutrient Management (Government)
 - Tried and Tested Nutrient Management (Industry)
 - Wagrico (Water Industry)
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Examples of Incentives

- Environmental Stewardship (ELS and HLS) (Government)
- SCAMP (Water Industry)
- Upstream Thinking (Water Industry)
- Paying for ecosystem services provides basis for funding, although challenging to develop comprehensive scheme

Examples of new initiatives

- Demonstration Test Catchments
 - Catchment-Based Approach
 - River Ray Project
 - Defra Strategic Evidence and Partnership Project
 - EA/NFU Single Issue Phosphate project
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Catchment management for drinking water protection

- Cost effectiveness may be high, especially taking into account wider benefits
- Synergies may not extend to all objectives – some compromises necessary
- Politicians may need to take political decisions as to the priorities
- Standards and compliance regimes are an obvious problem area

Standards and compliance regimes

- Catchment management can't easily deliver 100% compliance due to environmental variables – weather etc.
- Is 100% compliance necessary or can another approach give the protection required?
- Some drinking water standards are difficult and costly to deliver, and may not be risk-based or well evidenced
- Can standards be examined to validate that they provide a consistent (high) level of protection that is affordable for customers, given the compromises in welfare that society is having to make in other areas?

Who pays?

- 'Polluter pays' changing in favour of 'beneficiary pays'
- Agriculture – no ability to pass costs through to food consumers
- Water consumers - surrogate for food consumers?
- Government Policy. Water for Life (December 2011):
“Key elements of our approach will be:
- maximising wider sources of funding through payments for ecosystem services from the beneficiaries of a clean water environment”