

ENVIRONMENTAL
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NATIONAL WATER EVENT 2014

11th-12th
June 2014

Galway Bay Hotel, Salthill, Galway

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Comhshaol, Pobal agus Rialtas Áitiúil
Environment, Community and Local Government

Sustainable Agriculture: Role of the Nitrates Directive in Protecting Water Quality

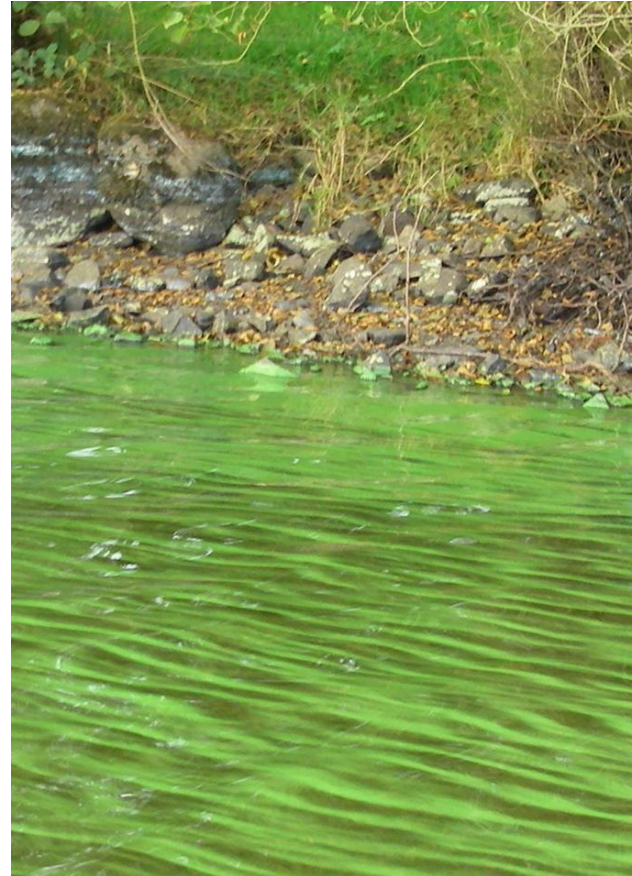
Pat Duggan
Senior Adviser, Water and Planning Division



Presentation Overview

- Ireland's Nitrates Action Programme
- Phosphorus
- Prohibited periods
- Food Harvest 2020
- Some concluding remarks

Eutrophication





The Nitrates Directive

To reduce water pollution caused or induced by nitrates from agricultural sources and to prevent further such pollution. The primary emphasis of the Directive is on the management of livestock manures and fertilisers

The nitrates directive is one of the key building blocks needed to support delivery of the environmental objectives of the Water Framework Directive





Nitrates Action Programme

- Whole territory approach
- Limits on farm stocking rates
- Minimum storage requirements for livestock manures
- Prohibited periods when fertilisers may not be landspread
- Legally binding limits for N and P
- Set-back distances from waters
- Maintenance of green cover on tillage lands

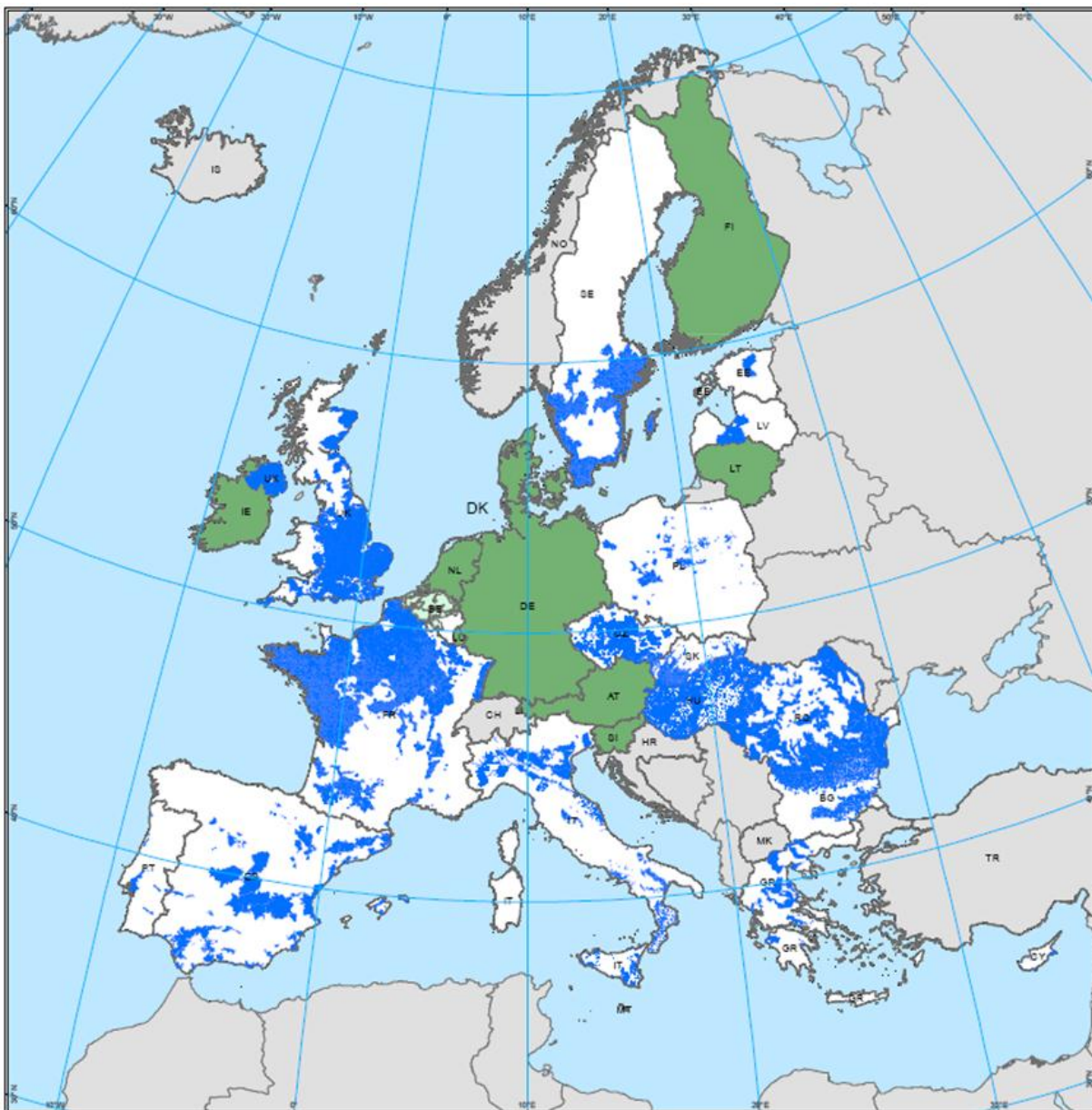


Nitrates Directive (91/676/EEC)

Map of Nitrate Vulnerable Zones
2012

NVZ status

-  territory is designated as NVZ
-  Member States applying an action programme to the whole national territory in line with Art. 3(5) of the Nitrates Directive
-  non-EU countries

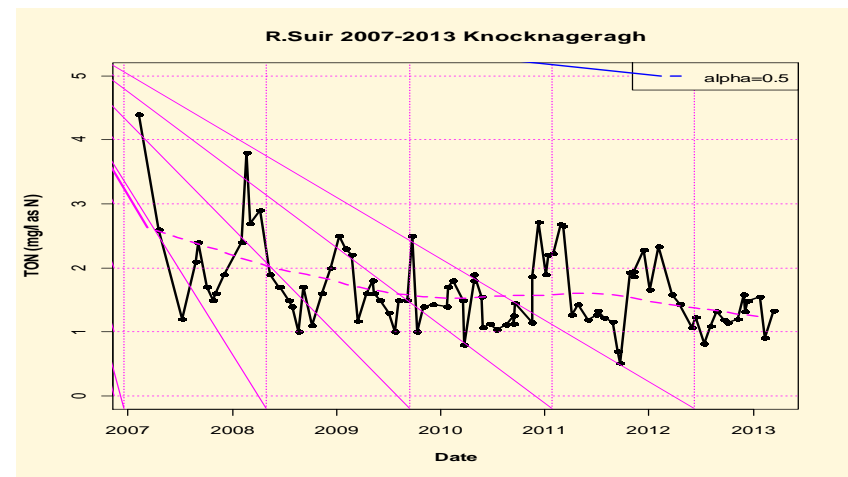
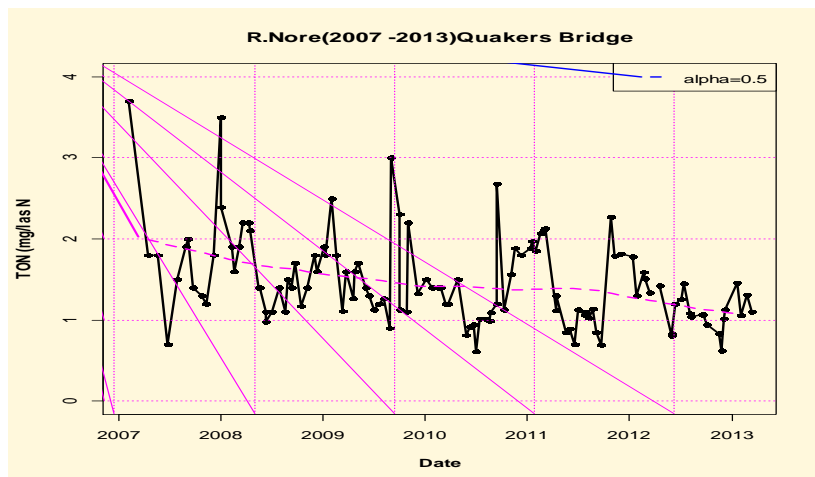
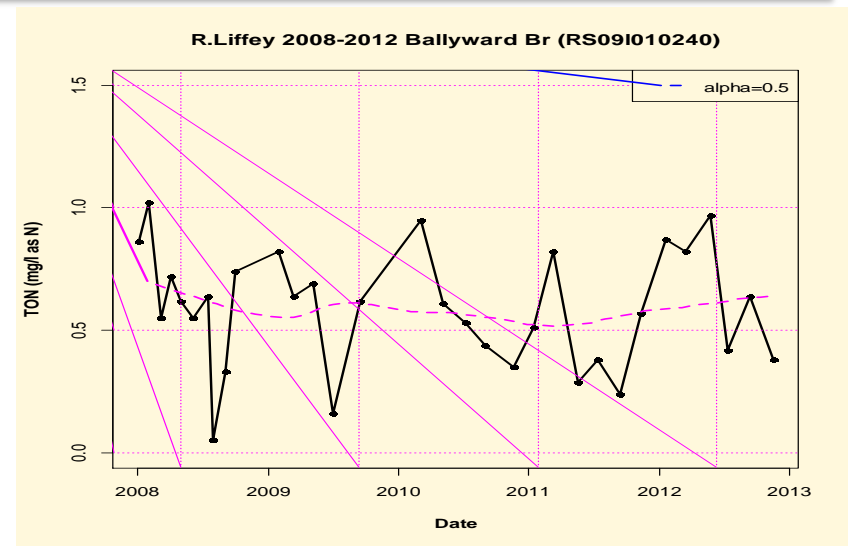
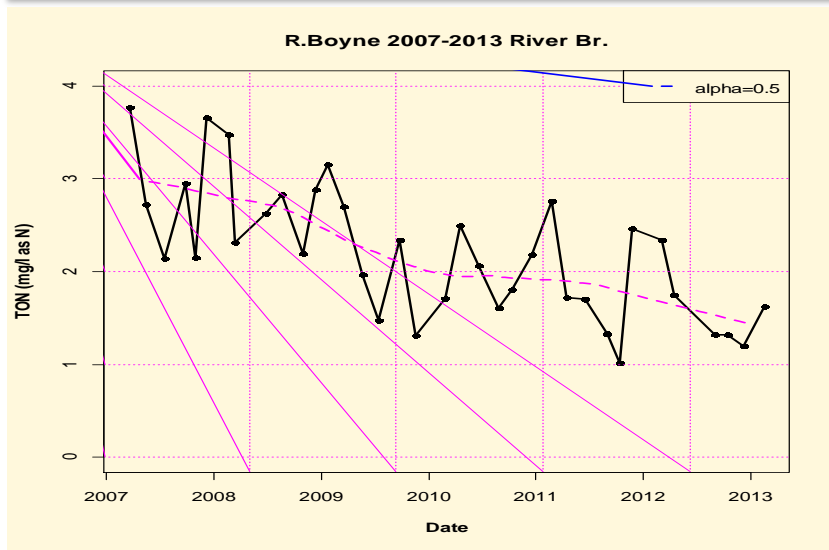


0 100 200 640 Kilometers

Source: DG ENV, Member States reports on Nitrates Directive Implementation
Coordinate Reference System: ETRS89 Lambert Azimuthal Equal Area
Cartography: JRC, 05/2013
© Eurogeographics for the administrative boundaries
© 2013 GeoBasis, INC., European Commission
Extracted from EUSA (European Land Information System for Agriculture and Environment)



Nitrate Trends in Selected Rivers 2007-2013





Some of the Main Changes to NAP3

- Phosphorus
 - Increased P allowances for grassland stocking rates greater than 85 kg/ha
 - Reduced P allowances for grassland stocking rates of less than 85 kg/ha
- Assumed P availability for organic fertilisers reduced when applied to Index 1 and 2 soils
- 2m uncultivated zone near surface waters
- Increased setback distances two weeks before and two weeks after the prohibited period
- Increased storage capacity for soiled water
- Some technical amendments to the N and P allowances for certain crops



A little bit of history

TABLE 1: Estimate of phosphorus balance for 1988 (tonnes P)

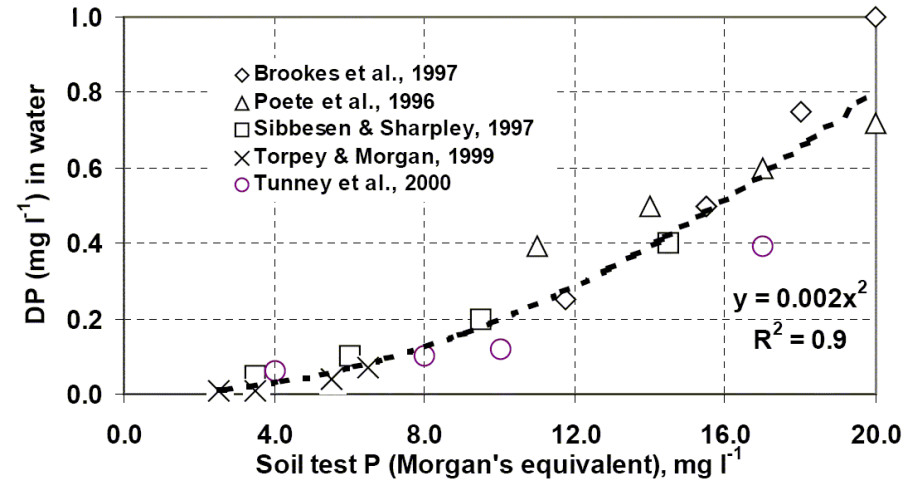
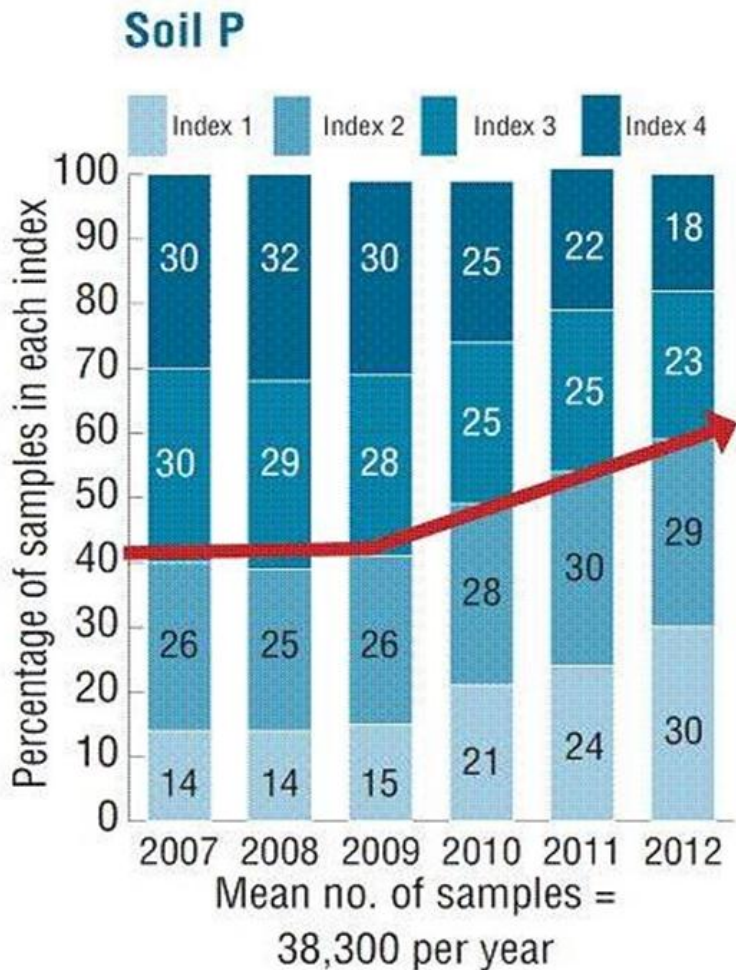
<i>Inputs</i>	
Chemical P fertiliser	62,446
Concentrates fed cattle and sheep 1.8×10^6 t (5 g P/kg)	9,000
Concentrates fed pigs and poultry 0.9×10^6 t (6.5 g P/kg)	5,850
Total P inputs	77,296
<i>Outputs</i>	
Tillage crops 451×10^3 ha (27 kg P/ha)	12,177
Cattle and sheep production 1089.6×10^3 t (8 g P/kg)	8,717
Milk $5,170 \times 10^6$ L (1 g P/L)	5,170
Soluble P loss to water, 6.89×10^6 ha (0.5 kg P/ha)	3,445
Pig and poultry production 291.0×10^3 t (6 g P/kg)	1,746
Total P outputs	31,255
<i>Build up of soil P</i>	
Inputs — Outputs	46,041



Changes in P advice from mid 1990s

- P allowances for grazing animals reduced
- Allowance now also differentiated on the basis of off-take
- Target STP (Index 3) has reduced from 7-10 to 5-8 mg/l (NAP1)
- P allowance for silage reduced; P not now advised when STP exceeds 8 mg/l (previously advised up to Morgan's STP 15 mg/l)

Soil Test Phosphorus



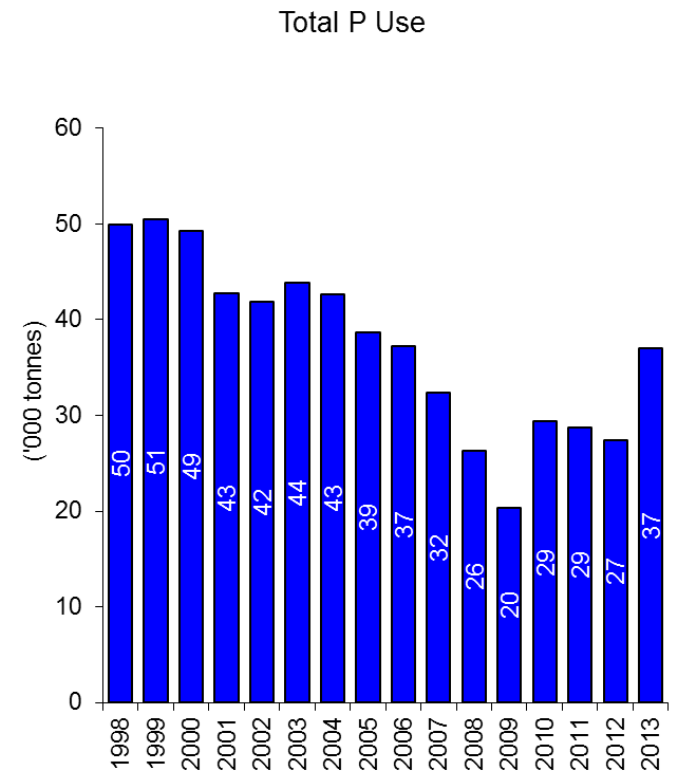
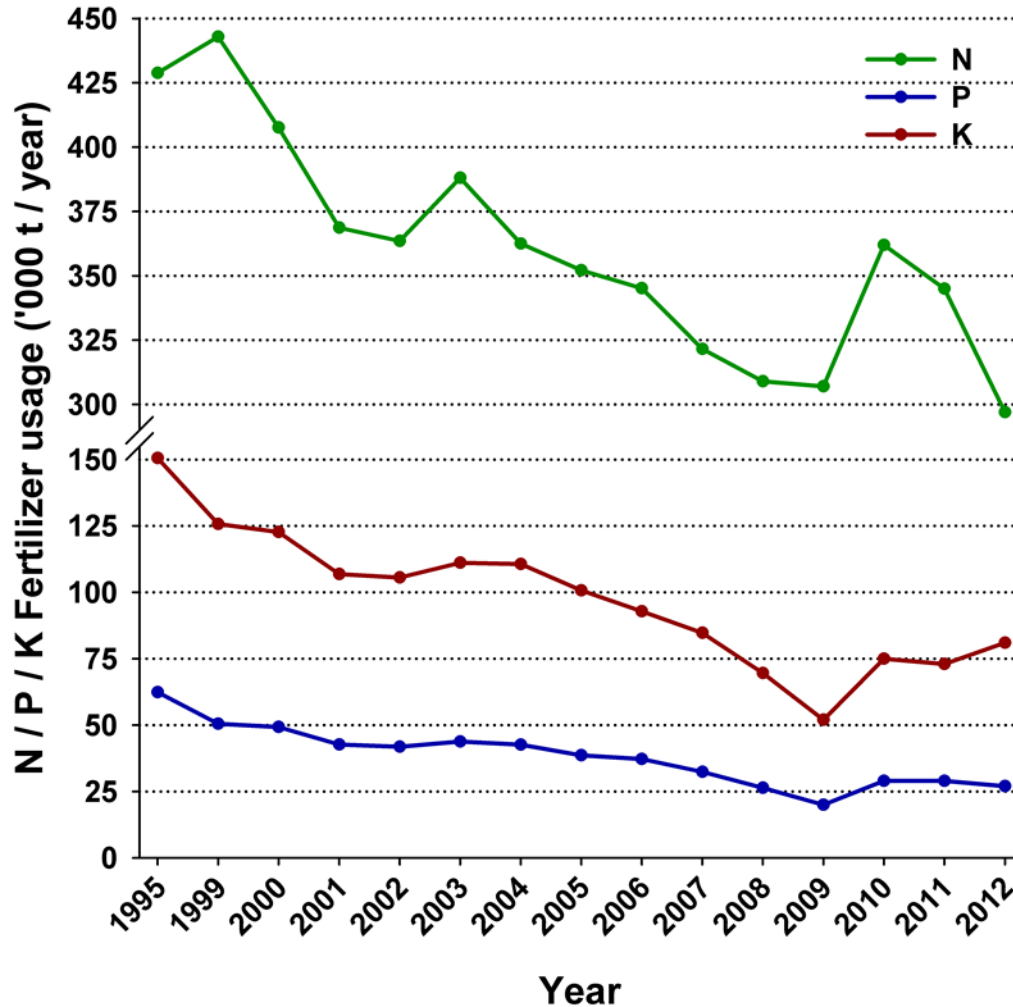
Relationship ($P < 0.001$) between STP and dissolved P (DP) loss to water based on 5 separate studies.

Positive relationship exists between STP and risk of P loss to water

Minimum STP needed to maintain herbage (grass) yield and herbage P concentration



National Fertiliser Use





Prohibited Period

- The potential for incidental nutrient loss is high when slurry spreading or other nutrient application is carried out during the closed period (ACP, Phase I Report)
- Resource efficiency (slurry as a nutrient source)
- €2.8 billion invested in housing and storage
- Positive signs – move to spring application; more use of newer technologies; trend towards greater use of land used for grazing livestock
- 2008; 2009; 2011; 2012 and 2013
- NAP3 requires MAFM to carry out assessment of the capacity of livestock manure facilities



Food Harvest 2020



- Agriculture is Ireland's largest indigenous industry
- Fourth largest net exporter of beef and dairy
- Increased world demand for food

There is potential for negative impact on surface water and ground water quality; need for mitigating measures, careful monitoring and careful management (FH2020 EAR)

Dairy – 50% increase in milk production volume

Beef – 20% increase in value of output

Sheep – 20% increase in value of production

Pigs – 50% increase in value of production

Poultry – 10% increase in value of output



Some concluding remarks

- Ireland has an effective Nitrates Action Programme which will continue to evolve
- Very good progress has been made since NAP1
- NAP on its own was not intended to deal with all water quality risks and challenges
- Water Framework Directive
- Food Harvest 2020 – presents both opportunities and challenges
- Need to address risks in a transparent way
- Evidence-based development of programmes of measures for the next cycle of river basin management plans

Thank you



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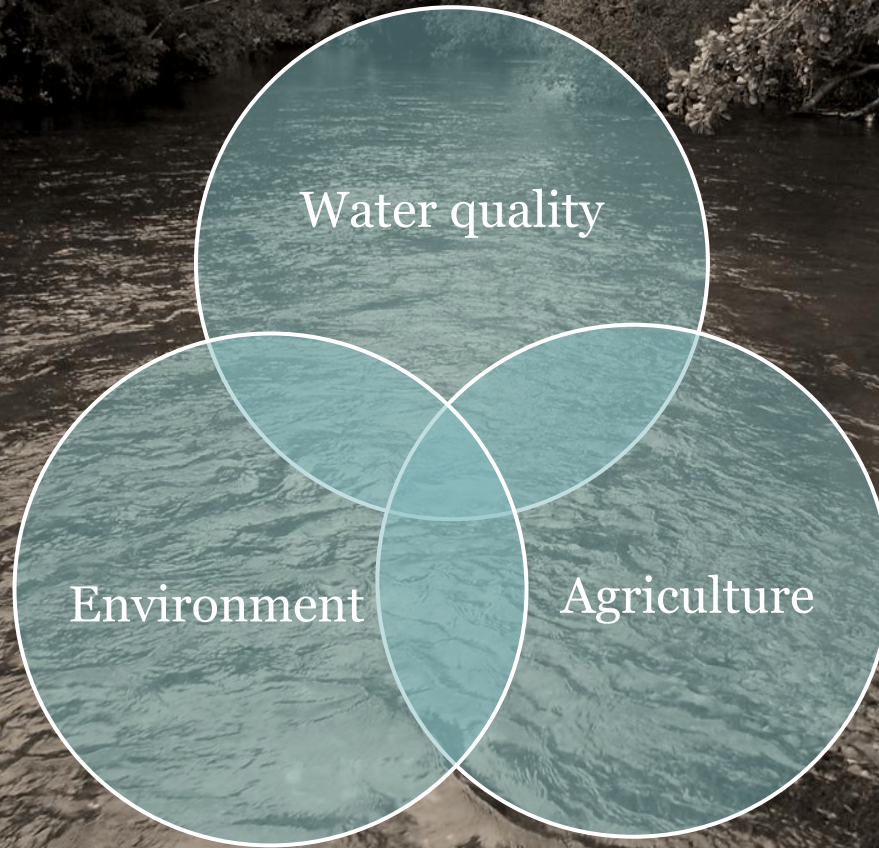
Water, Agriculture and the RDP

Bill Callanan, Senior Inspector
Nitrates, Biodiversity and Engineering Division



Department of
**Agriculture,
Food and the Marine**

An Roinn
**Talmhaíochta,
Bia agus Mara**



Water & Agriculture

- 7- 8 litres water to produce 1 litre milk
- 14-50 litres water to produce 1 kg meat
- Horticulture/ Mushroom/Nursery stock
- Agri-industry (Dairy and Meat processing, Distilling) etc.

Many Strengths

- Overall water quality is good
- Nitrate regulations (whole territory +P)
- Significant investment programme
- Nitrate levels have fallen over recent years
- Green image
- Increased focus on Sustainability
- ‘Efficiency’ and ‘Good environmental outcomes’ align

Challenges

- Achieving WFD standard is a high bar.
- FH2020.

Actions

- Significant Research Agenda
- Strong Advisory Service- Knowledge Transfer
- Robust controls
- Environmental Assessment of FH2020
- Origin Green/ Carbon counting/Smart farming
- RDP

Context of RDP development

- The EU Climate Change and Renewable Energy Package and the Kyoto Protocol.
- **The Water Framework Directive, the Groundwater Directive and the Nitrates Directive**
- The Habitats Directive, the Birds Directive and the European target of halting the loss of biodiversity by 2020.
- Towards more environmentally sustainable production

Process to date & timelines

- Ex ante evaluation - SWOT and needs assessment
- 2 periods of public consultation
- On-going stakeholder and public body consultation

Lead to:

- Draft set of measures for inclusion in programme

SEA/AA on draft programme currently out for public consultation until 16th of June

SWOT & NEEDS analysis

- Targeted Agri-Environment Scheme.
- Improved Nutrient Management Planning
 - including Protection of High status Waters
- Better Water usage in Agriculture

- Targeted training and/or advisory services with particular focus on Agri-environment and Animal Health

- Transferring and Sharing Knowledge amongst Farmers.

RDP Measures

- GLAS Agri-environmental scheme – main environmental instrument
- Maximum payment €5,000 GLAS
- Maximum payment €7,000 GLAS +
- Target participants 50,000
- 5 year scheme

Key ambitions of GLAS

- **40 %** invested in **Natura and biodiversity**, including commonages
- **30%** invested in **water quality**
- **30%** invested in general environmental and **climate change** actions

GLAS core requirements

- A Farm Advisory Service (FAS) approved agricultural planner must prepare GLAS application.
- Nutrient Management Plan for whole farm
- Appropriate training for specific actions
- Record keeping.

Targeted approach Tier 1

- Biodiversity - Natura and commonage (endangered species and sensitive habitats)
- Water - High status sites
- Climate - Higher stocked grassland farms and larger tillage farms selecting certain environmental actions
+ organic farmers

Tier 2 Secondary Priority

- Biodiversity - commonage (50-79% participation)
- Water – critical vulnerable water areas (to be defined)
- Climate - certain environmental actions beneficial for carbon storage and emission reduction

Tier 3 General Actions

- Biodiversity
 - Hedgerow rejuvenation, Bat, Bird, bee boxes, low input permanent pasture
- Water
 - Fencing of watercourses, Riparian margins (various widths)
- Climate – low emission slurry technology, tree planting, green cover, minimum tillage

Specific Output Based Schemes

- Proposed expansion of the Burren Scheme and New Scheme for FreshWater Pearl Mussel priority catchments
- Opportunity for locally led groups (e.g. by river catchment area) with an output focused approach.

Knowledge Transfer

Knowledge transfer groups (€100m)
- target 30,000 farmers.

European innovation partnership (EIP) operational groups
(€4m)

Continuous professional Development of Advisors (€2m)

TAMS II – On farm investment

- €395m over life RDP (*Proposed Budget*)
- Grant rate of 40%
- Young Farmer additional 20% top up
(FETAC 6, =>40 years)
- Schemes launched in phases – priority to Dairy and Young Farmers
- Selection and Eligibility Criteria

TAMS II – Proposed Scheme

- Dairy Equipment
- Farm Nutrient Storage/Animal Housing/Animal handling and welfare
- Slurry spreading Equipment (Low emission spreaders)
- Pig and Poultry Investment (Energy, water and medicines)
- Young Farmer Capital Investment (+20%) including Dairy Buildings (Parlour, Dairy, Yards)

Other Measures

- Organic Farming Scheme
- Beef Data and Genomics Programme
- Areas of Natural Constraint (old DAS)
- Collaborative and quality focused initiatives
- Leader

RDP- summary

- Targeted approach to RDP delivery
- Ambitious targets - circa. 50,000 farmers for GLAS
- Widespread consultation – leading to draft measures
- Complementary measures such as knowledge transfer groups and investment schemes
- Assist water framework directive targets

Key Messages

- Water quality is important for Agriculture.
- ‘Sustainability’ of Food production increasingly important
- Maintain Ireland’s green reputation

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