Policy Perspective on Nitrates and Water Quality

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Agriculture in Ireland

Total number of farmers: 128,200
Average farm size: 32.3 ha
Farm family holders by age: 7% < 35 yrs; 51% > 55 yrs
Total land area ('000ha): 6,900
Total area farmed ('000ha): 4,200
Grass: 3,788 (90%)
Cereals: 293 (7.0%)
Other crops: 109 (2.6%)
Forestry ('000ha): 731
Importance of Agri-food and Fisheries Sector

• Contributes gross annual output approaching €24 billion
• Directly employs over 150,000 people
• Provides the outlet for the produce from Ireland’s 128,000 farms
• Represents 60% of manufacturing exports by indigenous firms
• Domestically sources 71% of its raw materials

Taken from FH2020 report
EU Nitrates Directive

• Article 5 (1):
  – ‘Member States shall…establish action programmes in respect of designated vulnerable zones.’

• Article 5 (6):
  – ‘Member States shall draw up and implement suitable monitoring programmes to assess the effectiveness of action programmes established…’
Fertiliser use in Europe (million tonnes of nutrient)
Irish National Action Programme (NAP)

- Whole territory approach – not NVZ
- Agricultural Measures
- Nitrates Derogation
- Support:
  - Investment
  - Guidance document
- Assessing effectiveness:
  - General monitoring programme
  - Localised monitoring programme
  - Mini-catchment studies
Good Agricultural Practice Regulations

• Legal effect to National Action Programme

• Article 27 (1):
  – ‘The Minister for Agriculture…shall carry out….such monitoring and evaluation programmes in relation to farm practices…to determine the effectiveness of measures being taken in accordance with these Regulations.’

• Article 27 (4):
  – ‘The Minister for Agriculture…shall carry out….such monitoring, controls and reporting …for those purposes of Article 8…of Commission Decision of 22 Oct 2007.’
i.e. Nitrates Derogation
Monitoring the effectiveness of measures in Ireland’s National Action Programme

Article 5(6) of Directive

- **EPA National Water Quality Monitoring Programme**
  - General and localised monitoring programmes

- **Agricultural Catchments Programme (ACP)**
  - Mini-catchment studies funded by DAFM
  - Initial 4-yr period (2008-2011) operated by Teagasc
ACP Objectives

• Establish baseline information on agriculture in relation to Nitrates and Water Framework Directives

• Provide an evaluation of the NAP measures and the derogation in terms of water quality and farm practices

• Achieve greater understanding of factors that determine farmers’ understanding and implementation of the NAP

• Provide national focal points for technology transfer and education in relation to diffuse nutrient loss from agriculture to water
Food Harvest 2020
A vision for Irish agri-food and fisheries

2020 Growth targets

• Increase value of primary output in the agriculture and fisheries sector by €1.5 billion
  – Beef: 20% increase to current annual output value of €1.9 billion
  – Dairy: 50% increase in milk production i.e. 2.75 billion litre increase
• Increase value-added output by €3 billion
• Achieve an export target of €12 billion

Objective: SMART – GREEN – GROWTH

• Verified environmental quality in the farming, fishing and the food processing sector
• Effective communication of Ireland’s commitment to sustainability and implementation of world-class environmental practices
• Positive branding of Ireland as clean and green
Key messages

• Agricultural Catchments Programme is monitoring the effectiveness of measures in Ireland’s National Action Programme (NAP) under the Nitrates Directive
• NAP is main element of WFD implementation in relation to agriculture
• NAP addresses key issues for Irish water quality identified by EPA
• Implementation of NAP is controlled under the GAP Regulations
• Control is also achieved through SMR 4 of Cross-Compliance
• Environmental quality verification by ACP to satisfy sustainability requirement of Food Harvest 2020
Environment – EU Policy Context

• “Resource efficiency” an urgent priority
  – EC ‘roadmap’ requires change & sets milestones for 2020
  – Issues: meeting climate change targets, ‘environmental footprint’ for products; shifting taxation away from labour to environmental impacts; avoiding pollution from fertilisers

• Greenhouse gas emissions:
  – 20% reduction on 2005 emissions required by 2020 from agriculture, transport, residential & industrial sources

• Water Framework Directive
  – Improving water quality is a national priority
  – Drinking water standards must be met

• Sustainability – a core concept
  – Linking to sustainability will give a competitive advantage
Water Quality in Ireland

- **Groundwater**
  - 8% of area polluted by P and N
  - Agriculture

- **Rivers**
  - Water quality impaired in 30% of river channel
  - Agriculture is a contributor

- **Lakes**
  - 19% of lakes moderately or strongly eutrophic

- **Estuarine and Coastal Waters**
  - 5% of total survey area eutrophic (2007-2009)
  - Agriculture contributes ~80% N load & 26% P load
Suspected causes of River Pollution in Ireland

- Suspected Causes of Serious Pollution - 20 Sites
- Suspected Causes of Slight Pollution - 547 Sites
- Suspected Causes of Moderate Pollution - 386 Sites

Department of Agriculture, Fisheries and Food
An Roinn Talmhaíochta, Iscaigh agus Bia
Groundwater Chemical Status

Receptor orientated risk-based approach (WFD and Directive 2006/118/EC)
Nitrate Levels in Groundwater and Rivers
Trophic Status of Estuaries and Bays
Nutrient Sources across Europe

**Nitrogen**
- Agriculture: 338 kt
- Urban waste water: 30 kt
- Households not connected: 12 kt
- Industry: 98 kt
- Other diffuse losses: 12 kt

**Phosphorus**
- Agriculture: 727 kt
- Urban waste water: 5 kt
- Households not connected: 4 kt
- Industry: 17 kt
- Other diffuse losses: 1 kt
European and international instruments to combat eutrophication

Connection of industry and households to waste water treatment
Higher level treatment of waste water
Designation of water areas sensitive to nutrient inputs

EU Nitrates Directive (91/676/EEC)
Good agricultural practice
Designation of water zones vulnerable to nitrogen losses

Industrial and agricultural point sources
Best Available Techniques
Emission and discharge limits

EU Water Framework Directive (2000/60/EC)
Normative definitions describing good ecological status of a water body
River basin management plans

EU National Emissions Ceiling Directive (2001/81/EC)
Ceilings for air emissions of nitrogen

MARPOL Annex VI
Emission control standards for ships
Emission control sea areas with stricter ship standards

UNECE Convention on Long-range Transboundary Air Pollution -(Gothenburg Protocol)
Industrial and agricultural point sources
Emission targets for nitrogen
Transboundary air transport of nitrogen
Nutrient Reductions across Europe
Ireland - Trends in Nutrient Inputs 1995-2005

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<th>Nitrogen reduction</th>
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<td>Point</td>
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<tr>
<td>• Industry</td>
<td>26%</td>
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<td>Total</td>
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• PARCOM Recommendation 88/2 on the reduction of nutrient inputs
• % reduction in nitrogen and phosphorus losses 1995–2005
• Estimated using HARP-NUT Guidelines and loss coefficients
• Comparisons based on estimates for the 3 river basin districts along Ireland’s eastern and southern coasts
Conclusions

• Economic opportunities – Food Harvest 2020
• Water resources are an important natural resource and must be carefully managed
• Efficient environmentally sustainable production
• Marketing opportunities
• Potential negative impacts on the environment must be credibly addressed
• Best practice and credible science