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<b>Paper Title:</b>	<b>Priorities for Delivering Water Framework Directive (WFD) requirements:</b> Agricultural Pollution Issues – and the implications for natural resource management
<b>Paper Reference:</b>	<b>NRW B B 46.16</b>
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<b>Purpose of Paper:</b>	<b>Information</b> Highlight the scale and impact of existing agricultural pollution issues, together with the integrated solutions now being developed across Welsh Government (WG) and within NRW
<b>Recommendation:</b>	The Board is asked to note the extent of existing agricultural pollution incidents and their disproportionate impact on the water environment, and endorse: <ul style="list-style-type: none"> <li>• NRW’s current approach to addressing both point source and diffuse agricultural pollution – and the extent of the joint working now being undertaken by relevant WG Departments as well as within NRW</li> <li>• The need to engage further with the agricultural sector in order to drive forward improvements in natural resource management.</li> </ul>

<b>Impact:</b> To note – all headings might not be applicable to the topic	<p><i>How do the proposals in this paper help NRW achieve the Well-Being of Future Generations Act principles in terms of:</i></p> <p><b>Looking at the <u>long term</u>:</b> Reducing impacts from agricultural pollution deliver multiple benefits to society; reducing water treatment costs, safeguarding fish stocks alongside other biodiversity and enabling the recreation and tourism sectors to make a major contribution to the Welsh economy.</p> <p><b>Taking an <u>integrated</u> approach:</b> Current WG and NRW work on tackling agricultural pollution involves</p>
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	<p>developing an integrated package of measures based on a combination of regulation, advice and incentive. Collation of information on pollution incidents (in particular through the Welsh Incident Recording System or WIRS) contributes to a wide range of policy influencing activities, including NRW's responses to WG consultations and documents such as the State of Natural Resources (SoNaRR).</p> <p><b>Involving a <u>diversity</u> of the population:</b>  Providing information, training and knowledge transfer within the agricultural sector and enabling cross-sector networking via R&amp;D could reduce both NRW and agricultural sector costs in the longer term as well as benefitting local communities and the recreation and tourism sectors.</p> <p><b>Working in a <u>collaborative</u> way:</b>  The WG's Water Division, the Department for Rural Affairs and the Department of Economy, Science and Technology, NRW, Agricultural Colleges and Private Industry are working together on developing solutions to agricultural pollution. NRW is working closely with all relevant parts of WG and has established an officer level working group to ensure expertise is regularly shared between KSP and operational staff. Closer working with the agricultural sector will be promoted via WG-led engagement groups.</p> <p><b><u>Preventing</u> issues from occurring:</b>  Many of the 'day jobs' undertaken by NRM teams contribute to preventative action e.g. the provision of advice to individual farmers alongside NRW's participation in the Farming Connect programme. This latter involves working with others from outside NRW to encourage land managers to take preventative action and positive measures.</p>
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**Issue**

1. As set out in the previous WFD Framework paper (NRW B.29.16) agricultural pollution is the third most frequent reason for failing to achieve good status in Wales. It affects some 180 individual waterbodies. The number of pollution incidents caused by dairy and beef farms across Wales has fluctuated between 85 and 120 for each of the last six years (see Annex 1). Recent wet winters and a significant downturn in the dairy market have added to the pressure on the environment, on NRW's own resources and those of farmers; reducing their capacity to investments in slurry and silage store management.
2. Point source pollution incidents (such as those caused by overflowing slurry stores) are concentrated in particular parts of Wales. Over 60% of the incidents during the last three years took place within the milk field of Carmarthenshire and Pembrokeshire. These required significant input on the part of local NRM teams (see Annex 2).

3. Diffuse water pollution arises from rainfall and/or snowmelt moving over and through the soil. This picks up pollutants before depositing them into lakes, rivers, wetlands, coastal waters and groundwater. From an agricultural perspective, the main pollutants include:
  - Excess fertilisers and pesticides
  - Sediment arising from cultivation as well as the movements of vehicles and animals
  - Bacteria and nutrients deposited by livestock.
4. The involvement of various contributory factors and separate sources means that diffuse pollution is particularly difficult to deal with. As part of working with WG to support the signing of Glastir Advanced contracts, NRW prepared more than 100 Farm Nutrient Management Plans over the period November 2013 - October 2014. Soil sampling revealed that over 75% of fields were too acidic for optimum plant growth, increasing the risk of nutrient enrichment to watercourses. In addition, over a third of agriculturally improved fields exceeded the optimum phosphate level and posed a significant risk to the water environment.
5. NRW's field assessments also identified almost ten management issues for every potential Glastir farm examined. Issues affecting watercourses (e.g. livestock crossing points, bank erosion and nutrient enrichment) accounted for 25% of problems whilst the poaching of soil by livestock and the tracking of vehicles accounted for another 48%.
6. Ongoing agricultural pollution arising from both point and diffuse sources is having a serious detrimental effect on the Welsh environment and impacts on our ability to meet WFD targets under the River Basin Management Programme. This situation is reflected within SoNaRR as well as NRW's evidence on the case for substantially extending the area currently covered by Nitrate Vulnerable Zones (NVZ). A WG consultation on this issue is likely to take place shortly.

## **Background**

7. Both beef and dairy cattle are now heavily concentrated within the enclosed lowlands (see Annex 4). This distribution correlates with that of known point source pollution incidents (see Annex 5).
8. Over the last three years, there have been 248 agricultural point source pollution incidents in Wales at an average of 1.6 per week (see Annex 2). A relatively small proportion of these result in prosecution (5.6%) but NRW formal warnings (42.7%) and cautions (5.6%) are often taken seriously by the farmers concerned. Coupled with the NRW cost-recovery process and the serving of Regulation 7 Slurry, Silage and Agricultural Fuel Oil Regulations (SSAFO) notices, warnings and cautions often provide better environmental outcomes than a prosecution accompanied by a fine.
9. Introducing new regulations on agricultural pollution will make little difference unless existing requirements are meaningfully enforced. The courts often impose fines of a few thousand pounds only. This creates a climate of opinion in which it may be better to risk prosecution rather than invest substantial sums (c£90,000) in new slurry stores. The recent downturn in agricultural markets has exacerbated these kinds of attitudes.

## **Assessment**

10. The key nutrient management issues within the agricultural livestock sectors are:
  - Provision of slurry stores which are fit for purpose in terms of capacity, structural integrity and future business and climate change scenarios
  - Correct nutrient management including the use of slurries, manures, fertilisers and wastes for agricultural benefit
  - Good soil husbandry with the outcome of reducing sediment and diffuse pollution.
11. NRW staff from across the organisation have been involved in scoping out a range of possible solutions to the diffuse and point source pollution issues arising from all agricultural sectors. These solutions would involve changes to a wide range of regulatory, advisory and incentive mechanisms, including Nitrate Vulnerable Zones (NVZ), Civil Sanctions, Basic Rules applicable to all farmers, SSAFO Regulations, Cross Compliance, Earned Recognition, the Environmental Impact Assessment (EIA) Regulations, Rural Development Plan Funding, Farming Connect and the development of novel solutions via R&D (see full list at Annex 5).
12. Developing the concept of Earned Recognition (ER) could significantly reduce the need for NRW advice and regulatory visits. Under this approach, farms meeting Quality Assurance requirements (as inspected under industry-funded Farm Assurance Schemes) receive fewer NRW visits. Staff resources can then be focussed on operators with lower standards. ER currently operates only within the pig and poultry sectors.
13. NRW is working with the Department of Economy Science and Transport within WG to develop a number of co-funded programmes to help Companies (SME's) develop innovative products and/or services. For example, a prototype slurry separator designed for commercial use on a typical Welsh farm has been deployed at Coleg Sir Gaer to trial slurry de-watering; with the dry fraction used as a fertiliser. These initiatives aim to create new products and/or services, and convert current problems into economic assets. They tap into sectors and techniques that NRW may not have engaged with before – and where the proposed solutions are not constrained by our own pre-conceived wisdom.

## **Next Steps**

14. Following a presentation to the Ministers for Natural Resources and Agriculture on 9 February 2016, NRW staff from KSP and Operations have been meeting on a regular basis with WG officials from both Water Division and Rural Affairs. Further joint development of the list of proposed solutions (see Annex 5) is needed before they can be shared with agricultural sector representatives with a view to creating a comprehensive “Agri-Pollution & Nutrient Management Action Plan”.
15. The Water Strategy for Wales recognises that diffuse pollution can be difficult to identify and control and commits WG to “reviewing, and where appropriate changing, current practices and regulatory approaches by 2018”. In relation to this commitment, WG are now in the process of establishing a Diffuse Pollution

Programme Group (DPPG), involving NRW representatives as well as the various agricultural stakeholders. NRW are seeking to extend the remit of this Group so that it covers point source as well as diffuse pollution.

16. NRW previously used the opportunities provided by the Wales Land Management Forum (WLMF) to share information with the Farming Unions on the extent and impact of recent agricultural pollution incidents. Alongside the DPPG, the establishment of the Strategic Framework for Agriculture (SFA) by the previous Minister for Agriculture could provide further opportunities to involve the agricultural sector in the development of mutually beneficial solutions. These could include:
  - New approaches to regulation e.g. developing the concept of Earned Recognition
  - New approaches to waste management at the scale of the individual farm/neighbouring farms e.g. seeking to converting slurry into useful by-products, including energy.
17. Such approaches should be used to supplement more traditional approaches to regulation, advice and incentives as exemplified by NRW's continued investigation of pollution incidents; reporting back to Welsh Government under the cross compliance regime; participation in Farming Connect events; assisting with the preparation of Glastir management plans and advising on the targeting of Sustainable Production Grants under the Wales Rural Development Plan for Sustainable Communities (WRDP).
18. NRW is currently discussing with WG how best to develop each of these various work strands – and the extent to which they can be combined. In this context, the Board will wish to note that the Minister made a statement in NAW Plenary (week commencing 21 June) regarding the impact of a recent slurry pollution incident at Llanddowror in South West Wales. The initial assessment by the local NRM team was that around 80 salmonids, 150 bullheads, eels and lamprey had been killed.

## **Recommendations**

The Board is asked to note and endorse:

19. The extent of existing agricultural pollution incidents and their disproportionate impact on the water environment and on the work of certain NRW operational teams.
20. NRW's current approach to tackling both point source and diffuse agricultural pollution together with the extent of the joint working with relevant WG Departments and within NRW itself.
21. The need for NRW to engage more closely with the agricultural sector using the principles of sustainable natural resource management. Current thinking is that this should involve reducing the amount of NRW resources devoted to the investigation and enforcement of the less serious pollution incidents, whilst allocating the resultant savings to farmer advice and training (working through the auspices of the WG Farming Connect programme) as well as to R&D.

## **Key Risks**

22. Diffuse and point source pollution already combine to create the third most frequent reason for WFD failures in Wales.
23. Raising the thresholds used to trigger investigations and enforcement (in line with outcomes from the regulatory BAR) should reduce demands on local NRM teams. The time and resource gained can be used to advise groups of farmers (rather than dealing with individual cases pollution cases) and developing new approaches to waste management and regulation.
24. Continued falls in market prices and reductions in profitability will further reduce the capacity of farmers to install new slurry management facilities and to tackle smaller scale actions such as bankside poaching by livestock.
25. The current focus by the Farming Unions on addressing low market prices makes it more difficult to engage the agricultural sector in the development of mutually beneficial solutions to point source and diffuse pollution.
26. Failing to resolve agricultural pollution problems through a combination of better regulation, advice and incentives will prompt calls for a more rigorous approach to enforcement. This would impose additional costs on farmers – which may well contribute to a further increase in the number of pollution incidents.

## **Financial Implications**

27. Dealing with point source pollution incidents requires significant input by local NRM teams, with knock on effects on staff costs and/or other work.
28. Developing potential solutions to the agricultural pollution issue imposes extra time demands on KSP, impacting on staff costs and/or other work.
29. The cost of some of the proposed solutions (e.g. providing more advice to farmers) may fall on NRW, even where advice is delivered under the umbrella of Farming Connect.
30. WG could provide additional incentives to tackle pollution (via Sustainable Production Grants and/or Glastir). This would reduce the amount of WRDP funding available for other measures such as safeguarding statutory sites under Glastir Advanced, woodland restoration and rural community development.

## **Equality impact assessment (EqIA)**

An EqIA has not been carried out as part of developing a response to the agricultural pollution issue. No equality impacts are envisaged.

