

Wales Land Management Forum (WLMF) Sub Group on Agricultural Pollution

Minutes

Title of meeting:

Wales Land Management Forum (WLMF) Sub Group on Agricultural Pollution

Location: Microsoft Teams Meeting

Date of Meeting: 21st February 2022

Present:

Bob Vaughan, NRW (Chair)

Dennis Matheson, TFA

Marc Williams, NRW

James Ruggeri, HCC

Edward Davies, NRW

Chris Mills, WEL

Einir Williams, Farming Connect

Shane Thomas, Carmarthen Fishermen's Federation

Geraint Hamer, Welsh Government

Bernard Griffiths, FUW

Creighton Harvey, Carmarthen Fishermen's Federation

Chris Thomas, NRW

Fraser McAuley, CLA

Andrew Chambers, Welsh Government

Charlotte Priddy, AHDB

Mathew Walters, Welsh Government

Sarah Hetherington, NRW

Elizabeth Franks, Hafren Dyfrdwr

Sarah Jones, Dwr Cymru

Additional Attendees Present:

Geraint Hughes, Farming Connect (Item 3)

Secretariat:

Bronwen Martin, NRW

Apologies:

Rachel Lewis-Davies, NFU Cymru

Ruth Johnston, NRW

Nichola Salter, NRW

Kate Snow, United Utilities

Item 1 Introductions, Apologies and Declaration of Interest

1. Zoe was unable to join the meeting due to power issues following the bad weather, therefore Bob Vaughan, NRW is standing in as Chair today. Bob welcomed all to the Microsoft Teams meeting and noted apologies. Please note that the meeting is being recorded for the purpose of capturing the minutes and the digital file will be deleted once the meeting minutes have been approved.
2. No declarations of interest were raised in respect of Agenda items.
 - NB: All members of the group have completed declaration of interest forms already but should also declare if they have an interest in anything on the agenda.
3. Bob welcomed today's guest to the meeting; Geraint Hughes, Farming Connect.

Item 2 Review of Minutes

4. The Chair confirmed that once the meeting minutes have been reviewed and formally agreed by the group, they will be published on the NRW for the public to access. Therefore, it is important that the minutes are an accurate record of the meetings.
5. The group reviewed the previous meeting minutes from 17th January 2021. No comments or amendments were received in respect of the January meeting minutes.
6. Bronwen Martin, NRW shared the outstanding actions and verbal updates were provided.

Item 3 Farming Connect Presentation: Sensor trial informing slurry application

7. Geraint Hughes (Farming Connect) joined the meeting to discuss the sensors on trial at an Anglesey dairy farm to assist with slurry-spreading operations.

8. Geraint introduced himself including a brief background to his company [Lafan Consulting Group](#) and [Dewin Tech](#). They currently have one commercial product on the market which is a long-range wireless sensor open/close system for gates, doors, windows, cabinets etc. They are also in the process of setting up an Artificial Intelligence proof of concept for converting a calving box into four cameras creating an automatic detection system that supports farmers in the monitoring of calving behaviour during the calving season. This system will help farmers with herd management and animal welfare.

9. Geraint mentioned that they are also a broker under European Innovation Partnership (EIP) Wales and are supporting five projects. One of these is piloting the use of Internet of Things (IoT) technology for responding to the following challenge:

CHALLENGE: with the average size of Welsh dairy farms expanding and therefore the amount of slurry stored and applied per farm increasing, farmers are looking for solutions that will support them in making the best use of their fields. Farmers will want to minimise the risk of polluting water courses on their farms, whilst also optimising the nutrients available in slurry to further enrich their soils.

10. The project has been made more specific by looking at using sensors to minimise surface runoff. It is further expanded to look at nutrient content, nutrient value in soils and ways in which pollution can enter watercourses.

11. Geraint gave a brief background to the project and summarised the phases of the project plan - [Farming Connect - 'Internet of Things' sensor network](#).

12. Internet of Things (IoT) technology is taking all 'things' and connecting them to the internet. When something is connected to the internet, it can send and receive information. Connecting these 'things' to the internet gives you access to the information they send and receive. This information can help make more accurate decisions. Applying IoT in rural settings has up to now been difficult.

13. Geraint described how LoRaWAN (Long Range Wide Area Network) gateways are the link between sources of data (sensors in the environment) and people. It allows us to do IoT on a landscape scale and at a rural/farm scale. LoRaWAN allows IoT devices to communicate with internet connected applications over long distances with minimal battery usage. Geraint summarised some of the advantages and benefits of LoRaWAN.

14. After the desk-based review of available sensors, a number of sensors were purchased and were trialled to see how they actually performed in a real-life situation. They were monitored for a period of about 6 months and a soil scientist also provided feedback on the accuracy of these instruments.

15. During the project, each of the three Welsh farms (Farming Connect Demonstration Farms) were installed with a rain gauge, air temperature and humidity gauge, soil temperature and moisture probes (x3) and ultrasonic distance sensor. Positioning of the sensors is very important.

16. Geraint described the theory regarding installing a sensor above a slurry pit. They consulted with NRW and were informed that a lot of the incidents of serious pollution happens when there is a breach of the slurry pit and even the best infrastructure can be

compromised. The feedback suggested that having a sensor which detects a sudden change in the slurry pit could be of value and part of a monitoring process. This could also create an alert for the farmer and save critical time for a faster response to a situation.

17. Geraint gave a brief overview of the 'dewin dwr' application looking at installing sensors to monitor water quality. This project involves a trial with a wide selection of existing demonstration farms all affected by legislative changes and future industry changes.

18. Geraint said they are working closely with John Owen from Gelli Aur and are sharing learnings from this work and from the Tywydd Tywi Weather App. They are currently discussing how they might collaborate on the visualisation through an application programming interface (API). They are also sharing views on defining parameters for red/green alerts regarding slurry applications.

19. Geraint concluded with some thoughts:

- The Water Resources (Control of Agricultural Pollution) (Wales) Regulations 2021 – move away from a calendar-based approach? Trusted operator status? Advances in technology and few farm businesses have any capacity to carryout R&D work.
- Data from reliable sensor network can act as an audit log.
- Support better decision making beyond slurry application e.g., a soil temperature sensor could assist a farmer to decide when best to apply N fertiliser at start of a new season.
- Continued discussions on co-learning and collaboration with 'Tywydd Tywi Weather' with desire to work closer moving forward.
- Are we ready to pilot a 'digital catchment' in Wales? Data from local weather stations supported by farm specific data where it offers value and sensors placed in streams and rivers to monitor water quality.

20. Chris Mills, WEL asked why 'minimised' was used not 'prevent' pollution. Geraint said expectation management is important when working with innovation and it was far more prudent to use 'minimise' than perhaps 'eradicate'. Chris noted that polluting is against the law, therefore people are not in the position to 'minimise' it.

21. Regarding data coverage, Bob asked when the sensors are operating are they all at the appropriate frequency and at real time with continual recording. Geraint said you can vary them and the frequency in data collection depends on how valuable it would be to record frequent data. Battery life must also be considered.

22. Ed Davies, NRW asked about the farm data co-op concept. Geraint said that multinational companies extract data from rural businesses and currently we do not have control. There may be an opportunity to have a more coordinated response to this so that farmers are in control of their own data where they could have a data storage facility and would then have the ability to share data to benefit farm businesses.

23. Sarah Hetherington, NRW recalled that the slurry store sensor uses the logic of recording a change rather than continuous monitoring. However, regarding water quality, more continuous data would be required. Sarah asked whether the system is smart enough to go through a logic change and then send the data as well as extending battery life. Geraint said the parameters can be defined.
24. Bernard Griffiths, FUW asked about the cost and uptake of this system for one sensor on one farm. Geraint said that the first thing is determining whether there is LoRaWAN coverage, if you do then a robust gateway would cost around £800 and for a person to install this system it would cost another £300-£500; so, a gateway could cost around £1200. Geraint mentioned that a lot of the County Councils, especially the rural ones in Wales are rolling these out (e.g., installing them at schools). Regarding the sensor, the soil temperature, moisture, and probes would cost in the region of £250-300. The farmer is unlikely to purchase the sensor, but they may buy a package from a company on a subscription basis which would be around £10-20 per month. Geraint said they sell the open/close gate for £40 and £5 per month subscription. Cost is not necessarily considered a significant barrier for this system.
25. Creighton Harvey, CFF recalled a previous presentation from John Owen, Gelli Aur regarding Project Slurry and the Tywydd Tywi Weather App. Creighton asked about the recording of information relied upon by the farmer. Geraint said the data is recorded and is saved to the data storage on the cloud database and the farmers are able to see the data from their farms. Regarding accuracy, this is something which might need some consideration from those in enforcement and how they might establish the accuracy of the data points collected on a farm. Geraint suggested perhaps there is an opportunity for enforcement bodies to have their own network of sensors which they can then verify the accuracy of data with. Sharing data on request can also be considered.
26. Sarah Hetherington, NRW asked whether this system would consider the Met Office Forecast to inform the red/green scenarios and aiding decision making. Geraint said that this is something they have grappled with, deciphering the forecast for a red/green scenario would be difficult and the technology is not there yet.
27. Bob thanked Geraint for his presentation and said it would be good to keep in touch with updates on this project.

AP February 01: Bronwen Martin, NRW to circulate a copy of Geraint Hughes' presentation on the sensor trial.

Item 4 Matters Arising

28. Bob welcomed the group to discuss any matters arising from the previous meeting minutes, Update Paper, or relevant documents.
29. Dennis Matheson, TFA asked whether a replacement for Spencer Conlon, Welsh Government has been announced yet. Andrew Chambers, Welsh Government said there is no news regarding Spencer's replacement yet. Dennis
30. Dennis thanked the Sub Group for sending the letter to the Minister regarding Tenancy issues and also noted the response letter.

31. Fraser McAuley, CLA provided feedback regarding CLA member's experiences of trying to get planning applications through.
32. Creighton raised a query regarding a pollution incident on the Afon Clettwr (tributary of the Afon Teifi). Marc provided a brief update.
33. Bob mentioned the BBC Panorama episode from Monday 14th Feb 'A Cow's Life: The True Cost of Milk? The group discussed some of the points raised in the episode.

Creighton Harvey, CFF said that there were two main concerns highlighted by the television program. Firstly, the way that animal welfare issues were dealt with. Secondly, this was a Red Tractor farm. This suggests that something can be certified as being well-run and having high welfare standards, but as soon as the inspector walks off the farm, there is nothing stopping someone from carrying out unacceptable practices.

Bernard Griffiths, FUW said that the farm in the program had 800 cows and that one cow is probably not representative of how that farmer operates. The role of the undercover person should have been to report that cow rather than getting evidence etc. Bernard recalled some of the other points raised in the program, including the price of milk.

34. Bronwen Martin highlighted the note included in the Update Paper regarding Changes to Waste Exemptions from Geraint Richards, NRW:

WLMF Sub Group members are likely to be familiar with waste exemptions, even if they are not involved in the waste industry. In particular, farmers must register them for common activities occurring on farms which involve waste, e.g., building tracks, burning cleared vegetation, and dredging watercourses.

Welsh Government and DEFRA have been carrying out a review of waste exemptions and have proposed a number of changes, which are expected to come into effect later this year.

The intention behind the changes is to tackle waste crime and impacts on the environment from the waste industry, and as issues from farming weren't identified as a key issue to tackle, they have been designed to try to allow usual farming activities to continue unaffected. However, farmers will need to be aware of the changes and there may be direct impacts where diversified waste activities are taking place on farms such as Anaerobic Digestion or construction activities.

In addition, the three-yearly renewal of exemptions occurs this year, and we are expecting many farmers to renew their exemptions before the end of 2022.

A communications campaign will be run this year to inform those who may be affected, and we are looking for contacts from the WLMF Sub Group who can support us in sharing communications, in particular the agricultural unions in Wales.

Please contact Geraint Richards, NRW (email address has been circulated).

AP February 02: Members to contact Geraint Richards, NRW to support in sharing communications and information about the upcoming changes to Waste Exemptions.

Item 5 WLMF Sub Group Objectives

35. Ed Davies, NRW mentioned this item is in response to a suggestion regarding the organisations in this group working more in partnership with one another. This will help us better understand what actions of the organisations align with the objectives of the WLMF Sub Group, highlight opportunities for collaboration and allow us to draw on existing contacts. Ed reviewed the recommendations from the [WLMF Sub Group Interim Report \(2018\)](#) and provided a summary document which was circulated prior to this meeting.

36. Bernard said that lots of the points about the best management practices align with FUW as they disseminate information to their members through the diary, land use, livestock, and hill committees as well as county executive meetings. FUW do not really venture into consultancy, that is more through Farming Connect and ADAS. Bernard said that CPD is covered by their education and training committee.

37. Ed said there is not an expectation that all organisations would contribute to every objective but when things do align it can act as an aid. Ed said he will restructure the initial document so that it is easier for members to identify what they are doing and where there are collaborative opportunities. Ed requested feedback on this initial list, particularly whether there is anything missing from the list.

AP February 03: Members to provide feedback by 4th March on the initial list of Sub Group objectives which are to be contributed towards by members. Particularly highlighting whether there is anything missing from the list or suggesting amendments/additional points.

38. Sarah Hetherington, NRW clarified that members could send information to Ed and Bronwen for consideration.

39. Ed said any information would be very welcome and this should be valuable for the group as a whole. There is an opportunity for this to be a record to help get future projects off the ground, for example you could look at this list and see that another Sub Group member is also doing something which aligns and could then help with engagement, quality assurance, partnerships etc.

40. Chris Mills, WEL said this is a useful start but firstly, it needs to align with the specific objectives of this group and where organisations have clear contributions to make. Bob agreed and people should then sign up to this. Ed said that has been done in the past with the WLMF Sub Group Interim Report (2018), but perhaps this needs to be updated to reflect recent changes. Chris suggested that this could be something to discuss and thrash out when we meet as a group in person; what is this group trying to achieve. Bob agreed with this suggestion and recommended that there should also be a commitment from the different partners to deliver specific objectives.

41. Sarah mentioned that this is important to go to the next stage and build a network of competency to help bring together future projects and work.

42. Marc noted the objectives of the Group from the WLMF Sub Group Terms of Reference document:

- Undertake root cause analysis in order to achieve common understanding of the causes of agricultural pollution and the ways in which these are currently addressed.
- Identify potential options for legislative and non-legislative measures designed to address agricultural pollution.
- Estimate the resources required to deliver the changes required and appraise each option in terms of a cost benefit analysis as far as possible.
- Select a smaller number of priority options for further development, taking into account those likely to be the most beneficial in the context of other sources of diffuse and point source pollution.
- Adopt a partnership approach to identifying and bidding for the resources required to develop specific initiatives, and when appropriate act as the Steering Group during the implementation phase;
- Address the requirement to establish measurable targets for reducing the number of point source agricultural pollution incidents, tackling the extent of diffuse pollution and improving water quality over a specific timeframe;
- Raise awareness and commitment of key stakeholders within the WLMF and relevant sector bodies such as AHDB Dairy, Hybu Cig Cymru (HCC) and agricultural advisors;
- Assess any activities or interventions regarding outcomes relating to reducing agricultural pollution incidents in Wales;
- Develop and deliver innovative projects to help reduce agricultural pollution incidents in Wales;
- Share communication with member organisations to ensure accurate and consistent messages are reaching a wider audience.

Item 6 Any other business

43. The next WLMF Sub Group Meeting is Monday 21st March 2022.

44. Suggested that an in-person meeting could be arranged for Monday 25th April 2022.

45. Eimir Williams, Farming Connect mentioned that there is a webinar taking place on 15th March regarding "How improving water quality can benefit your business and the environment". Eimir will circulate information via Bronwen.

AP February 04: Eimir Williams, Farming Connect to circulate the information for the webinar regarding targeted priority catchment areas.

46. Dennis Matheson, TFA said DEFRA are in the process of setting up a committee to look at things that might be done to enable tenants to participate in their environmental land management scheme and comply with the water regulations and tree planting. George Dunn TFA CEO is on the committee and DEFRA have realised there are problems for tenants. Dennis mentioned that it is unknown whether Welsh Government

will follow suit but he hoped that a specific committee is set up on Wales to look at the overall picture. Andrew Chambers, Welsh Government said he would take this back to his colleagues who deal with tenancies and see if there is an update.

AP February 05: Andrew Chambers, Welsh Government to see whether there is an update on tenancies and the work that DEFRA is doing.

47. Creighton Harvey, CFF asked whether there was an update on when the outcome of the Judicial Review will be known. Andrew said there is no update at the moment.

48. Bernard mentioned the update on dairy pollution incidents which indicate a reduction and suggested that the group should welcome the direction of travel.

49. Bob mentioned that an email was circulated containing NRW's expectations document detailing aspirations for water companies to deliver as part of Ofwat's PR24 process. Please get in contact with Ruth Johnston, NRW with any views or comments by Friday 11th March 2022.

AP February 06: Members to contact with Ruth Johnston, NRW with any views or comments on NRW's expectations document regarding Ofwat's PR24 process the by Friday 11th March 2022.

Close meeting