

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: 12th December 2022

Present:

David (Dav) Letellier, NRW (Chair)

Rachel Lewis-Davies, NFU Cymru

Dennis Matheson, TFA

James Ruggeri, HCC

Einir Williams, Farming Connect

Shane Thomas, Carmarthen Fishermen's Federation

Creighton Harvey, Carmarthen Fishermen's Federation

Mathew Walters, Welsh Government

Sarah Jones, Dwr Cymru Welsh Water

Kate Snow, United Utilities

Bernard Griffiths, FUW

David Ball, AHDB

Fraser McAuley, CLA

Nichola Salter, NRW

Additional Attendees Present:

Geraint Hughes, Lafan Consulting Group (Item 2)

Nigel Elgar, Dwr Cymru Welsh Water (Item 3)

Keri, Beacons Water Group (Item 3)

Richard Roderick, Beacons Water Group (Item 3)

Secretariat:

Bronwen Martin, NRW

Apologies:

Zoe Henderson, NRW

Delyth Lewis-Jones, AHDB

Marc Williams, NRW

Katy Simmons, NRW

Sarah Hetherington, NRW

Item 1 Introductions, Apologies and Declaration of Interest

1. David (Dav) Letellier, NRW will be chairing the meeting today as Zoe Henderson (NRW Board Member and WLMF Sub Group Chair) is unable to attend. Dav 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. Dav mentioned that the meeting will finish earlier than scheduled because one of the guest presenters could not make the meeting. This presentation has been postponed and will be rescheduled in the New Year.

Item 2 Presentation: Internet of Things (IoT)

4. Geraint Hughes, Lafan Consulting Group joined the meeting to provide a follow up presentation sharing some conclusions from the project. The European Innovation Partnership (EIP) project on scoping Internet of Things (IoT) technology to make better decisions on slurry applications is now in its final phase. Geraint is representing Lafan Consulting Group who are contracted by Farming Connect as part of the EIP Partnership. The EIP was the source of funding for this project and Lafan Consulting Group were coordinating and managing it.
5. Geraint provided the group with an initial introduction to 'Internet of Things' in February 2022 - [WLMF Sub Group meeting minutes \(21 February 2022\)](#).
6. The European Innovation Partnership (EIP) have supported 45 projects and each EIP project has a challenge statement/issue/problem that it attempts to address. This project brings together academia and research with farmers who are running trials, pilots and field research on their farms.

7. Geraint reminded the group of the challenge for this project:

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 decisions on when and how to apply slurry on their fields. Farmers will want to avoid risks of polluting water courses on their farms, whilst also optimising the nutrients available in slurry to further enrich their soils.

8. Geraint said they wanted to use the IoT to see how we could use better data from sensors to avoid the risks of polluting water courses. Geraint recapped the project plan which can be found on the Farming Connect website - [Farming Connect: European Innovation Partnership \(EIP\) Wales - 'Internet of Things' \(IoT\)](#).
9. The project had a total budget of £33,000 +VAT. It started in January 2020 and the end of project report was due in April/May 2022. There were four phases for this project looking at the IoT and sensors and applying them in a farm environment to provide farmers with better data and tools for decision making.
10. Geraint gave a brief overview of IoT and Long-Range Wide Area Network (LoRaWAN) technology and explained how it was used/deployed in the project. Geraint then summarised some of the results from the test farms within the project.
11. Geraint mentioned the potential costs involved with deploying this type of technology on other farms along with the capabilities.
12. Throughout the project, the team have been engaging with those developing the Tywydd Tywi Weather App. They have shared views in defining parameters for alerts, collaborated on the visualisation for the app and discussed how the two projects could add value to each other.

AP December 01: Bronwen Martin, NRW to share a copy of Geraint Hughes presentation along with his contact details.

13. Rachel Lewis-Davies, NFU Cymru said farmers are very interested in data and the NFU Cymru President recently quoted some of the data which was collected on his farm. Rachel said this looks like a very positive project and could be a very significant tool for decision making on farms in the future.
14. Bernard Griffiths, FUW recalled that soil temperature varies with the depth and presumably the soil moisture also varies with depth. Bernard asked is there a need to consider whether slurry is injected or spread on the surface, in the model. Geraint said we need to explore this, and although he does not have any particular expertise in the technology of slurry application via injecting, he understands that this would likely be a better method for reducing the environmental risks. We installed the sensors at 10cm depth because that is the standard for measuring. Geraint explained that you would need to take soil temperature into consideration because you might have soil that is 4 degrees celsius at 10cm depth but it might be frozen at the surface. You would then have an algorithm which says 'if the air temperature is below 2 degrees celsius then do not go there', despite the soil moisture being alright. Geraint said he was a bit reluctant to go into the area of saying how the slurry should be applied, but this project has been looking at what useful data could be applied. Bernard said he would hope that there

would be an allowance made for slurry being injected because this method has less potential to damage the environment than spreading on the surface but perhaps that is something to look into going forward.

Item 3 Presentation: Brecon Beacons Mega Catchment & Beacons Water Group

15. Nigel Elgar, Dwr Cymru Welsh Water (DCWW) joined the meeting to provide an overview and update regarding the Brecon Beacons Mega Catchment and the Beacons Water Group. Nigel also invited two Beacons Water Group farmers (Keri & Richard) to the meeting to support the discussion.
16. Nigel first presented the Brecon Beacons Mega Catchment work to the WLMF Sub Group in December 2019 following the return from a study tour to the Catskills, USA. The trip was funded by DCWW and supported by NRW. Catskills is the water catchment for New York City, USA. It is an international example of water protection through maintaining working landscapes, agriculture and forestry. Nigel said the key is the working landscapes, including community; it is not about rewilding. DCWW have used this as the model for developing the Brecon Beacons Mega Catchment Programme. The idea of the trip was to see what lessons could be learned and adapted into a Welsh context. It was a follow up trip following an exchange in March 2018 where a contingent came over from the USA to visit Wales; and then in May 2019 some colleagues from DCWW, NRW and Welsh Government went back to Catskills. The trip was specifically aimed at understanding how the farmer engagement process works and how it is maintained. The Catskills have been successfully delivering high quality water into an unfiltered drinking water supply for over 30 years, with 95% of farmers engaged in the voluntary scheme.
17. The Catskills Watershed Agriculture Council (WAC) is a partnership approach where the farmers are part of the solution through land management and managing the programme itself. Language and communication are a major factor, and each farmer was assigned a local facilitator with ongoing CPD, training and social events keeping everybody engaged. Nigel explained that there was a sense of accountability where the farmers had to follow quite rigorous plans, which were peer reviewed on an annual basis. All the farm information shared is confidential, and if a farmer had not actually complied with their plan, there was no penalties as such but there was withholding of payments. The farmers were welcome back into the fold as soon as they could rectify the issues and get their business back on track.
18. The project is locally lead, science based and voluntary. Many of the staff were on permanent contracts and lived in the area. Some of the farm facilitators have been working with the same farmers for over 20 years. Cornell University was a very important part of the WAC providing research and data collection. Trust was a really important feature and many of the directors of WAC are active farmers themselves and seen as fairly representing the farmer's interests as well as ensuring funding delivers on its objectives.
19. Nigel explained they came back from the trip with a long list of things they would like to do. We wanted to bring everything together in one working document which was reviewed annually. We also wanted to develop a nutrient management credit, so for

following a farm plan and going above regulation, the farmers would be rewarded. We said we would develop a field recording app and look at precision feed planning by balancing the amount of nutrients coming onto the farm with the amount of nutrient leaving the farm. We also wanted to look at applying for Carbon Neutral Farming European Innovation Partnership (EIP) and a Vegetated Buffer Strip EIP as well.

20. Nigel discussed what they actually did do. The most important thing was piloting a new way of working. The Beacons Water Group (BWG) was set up originally through Agrisgôp and at the end of the 12 months, the BWG then set themselves up as a Community Interest Company (CIC). Nigel explained the relationship between DCWW and the BWG, where DCWW have an agreement with the CIC (not with the individual farmers). The CIC is self-governing, so they administer any funds they are receiving and ensure that standards and obligations are met.
21. Nigel said collectively they focused on hydrological flow mapping. Nigel showed a map of a very flat arable field with adjacent hills. The water was running off the hills and across the area. The group found that the mapping produced was very representative of what they saw on the ground and was seen as opportunity mapping rather than risk mapping. In this particular case, the farmer moved his gateway away from the main water flow area and he also changed the direction of the tram lines from down the field to across the flow of the water. Farmers also use the hydrological flow mapping to influence where buffer strips are put. After seeing the hydrological flow mapping, all BWG farmers are putting 6 metre buffers as a standard.
22. We have also done risk mapping which was started before the new agricultural regulations. Nigel discussed one particular farm where much of the land area is over 12 degrees slope. They mapped the slope, sandy soils and the flood zone areas and incorporated a 10 meter no spread buffer for all water courses. The approach with the risk mapping is for the farmers to understand those risks so that the appropriate management is put into place and minimize the risk of diffuse pollution.
23. Nigel said they have also looked at enhanced nutrient management plans. Rather than looking at straightforward RB209 data, we want to make sure the nutrients that are applied are utilised effectively. By following those enhanced nutrient management plans, the farms will be eligible for a nutrient management credit that is going above regulation to protect water from diffuse pollution sources.
24. Some weather stations have also been installed which are monitoring soil moisture, soil temperature and leaf moisture index as well as general weather data. This information is also incorporated into the final reports when the farmers are following the nutrient management plan to help optimise timing of application along with collating evidence and best practice.
25. Nigel said they have successfully managed to apply for a Carbon EIP which finishes in June, but there are some really interesting results already coming out of that. The BWG have also supported the 4 Rivers for Life Project. NRW have been to the farms and looked at the work the farmers have done to stabilise the river banks. The farmers have also hosted another Agrisgôp region who came to see what has been done and to see how we can exchange ideas and transfer knowledge.

26. Nigel reviewed some of the things they said they would do but have not done including developing a field recording app. They looked at it and decided that it was important to make any scheme accessible to all, so that idea has been shelved for the time being. We have not done precision feed planning yet, but that is on the agenda for future work. They applied for the Vegetative Buffer Strip EIP but sadly, it did not get approved. However, all the farms have adopted a 6-meter buffer in crop fields.
27. Nigel gave an overview of the next steps for the BWG. They are still feeding into the Brecon Beacons Mega Catchment via the steering group. There have also been a number of meetings with the Welsh Government staff managing the Sustainable Farming Scheme (SFS) and it is really great to see some of the ideas being incorporated into the proposals. BWG is also represented on the Usk Catchment Partnership and in the catchment market development work that is being undertaken with ARUP and DCWW.
28. Nigel summarised some of the future work including:
- The Carbon EIP is being finalised and will be out in June with a final report following that shortly after
 - Precision feed planning
 - A research project with Aberystwyth University and IBERS looking into field trials
 - Refining nutrient management credit system to reward farmers
 - Continue knowledge exchange dissemination with other groups
 - Trialling no fence collars in a different situations
29. Nigel said they need the ability to pilot approaches within the SFS, develop a facilitator network (key to group expansion/replication) and to improve communications (better engagement).

AP December 02: Bronwen Martin, NRW to share a copy of the DCWW presentation and Nigel Elgar's (DCWW) contact details.

30. Dav thanked Nigel for the update on a great initiative and asked Keri and Richard to share some thoughts. Richard said the BWG are very keen to move away from the prescribed spreading windows and they are working towards using technology and data. Keri said he wanted to emphasise the importance of collaboration and the power of farming groups working together. A benefit of working as a farmer collaboration is being able to demonstrate to other groups what is possible. A Brecon regenerative farming group which has been running for 10 years came to visit us, and it was great to see the farmer-to-farmer engagement, encouraging collaboration, explaining our story, explaining how we have taken time to develop the group over four years and get to a Community Interest Company stage that allows us to self-fund and self-educate and take us on educational tours.
31. Fraser McAuley, CLA said he recently visited a CLA member who farms in this area, and they discussed this catchment work. Fraser asked if there is an opportunity for others to get involved. Nigel said we are looking at how we can expand the group and particularly DCWW funding works. DCWW work in Asset Management Plan (AMP) periods and our next AMP starts in 2025 so we would like to start thinking of how we can move forward with these groups in that next period. There may not be involvement

immediately, but it is certainly something we want to engage with and see how we can support others. There will not be a final report on the Beacons Water Group as such, the Carbon EIP will have a final report. This will hopefully be an ongoing programme with a number of case studies that we can evidence what has or has not worked and to get future investment to support other initiatives like this. Keri said it would be good to understand who that farmer is because we are keen to find people that are keen to start off. We have learnt that our group works because we have an in-built trust. We would also like to get a facilitator set up so that we can cross pollinate our information and knowledge transfer to them and they can then take it to other likeminded farmers to build a new network of five or six people in a different community or catchment. We could then have several pockets of farmers that work together with the facilitator.

32. Rachel said she sits on the Welsh Water Customer Challenge Group and the topic of nature-based solutions often comes up. Rachel wanted to understand whether DCWW through the Brecon Beacons Mega Catchment is actually funding nature-based solutions on the ground (e.g., using the 6m buffers). Nigel said the Brecon Beacons Mega catchment is a DCWW collaborative approach for all the stakeholders in the Brecon Beacons National Park. The BWG has been supported through the programme but are an independent group of six farmers. DCWW's approach to BWG has not been telling them what we want them to do but we have discussed the challenges and asked them how they can help solve them, what are the blockers, what would they like to do and how can we make that happen (e.g., seed funding, knowledge transfer etc.). DCWW are not driving the 6m buffer, it is the BWG farmers that are driving that, as well as the hydrological flow mapping and putting up the weather stations. Rachel asked if DCWW are funding nature-based solutions on these farms or are they providing financial incentives. Nigel said DCWW are not providing financial incentives but are where necessary, helping to fund the interventions that the BWG farmers want to make themselves. Rachel clarified that it is farmer lead, but DCWW through the Mega Catchment Project are funding nature-based solutions. Nigel said DCWW are piloting approaches that the farmers are coming to them with which helps to gather data and evidence to assess whether things can be expanded further.
33. Keri said the hydrological flow mapping is probably one of the most important tools which has really made a big difference but instead of calling it risk mapping, they call it opportunity mapping. Keri said it does not mean that you cannot grow food in a heavily waterlogged field because well managed food production is possible but knowing that a particular field is a risk is key to driving the prevention of pollution. Keri suggested this should be rolled out on every farm in Wales and sharing knowledge about what to do after owning the map such as developing practices that solve the problems (e.g., what type of procedures makes a particular crop safe within a certain field). Fields should have different sets of solutions once the risks are understood. There should also be paid options for example if a farmer provides a 9m buffer zone. There also needs to be a change in mindset to use these solutions to take the nutrients out of the rivers. Going forward, we need to emphasize the power of cover crops, incentivise it and help farmers understand the importance of using them. Keri mentioned 'profit for pasture' and the benefit of keeping covers over winter and into spring. BWG are just beginning to understand what impact that could have in delaying the river for 30 minutes to help during events like Storm Dennis. Farmers could also be paid another level within a catchment farm approach to have bigger covers. Ultimately, a toolbox of things farmers can use can be cross pollinated with the facilitators and then shared with other farmer

groups. Keri said the BGW would also like to take things further by looking into creating ponds and exploring the possibility of a farm energy approach with small scale hydro.

34. Nigel said that whilst the driver for DCWW was water quality, the main outcome of this project has been linked to social science. It has been about how we get people to really feel engaged in tackling challenges together. The Beacons Water Group have been empowered to come up with ideas and solutions. These farmers understand the whole picture and have invested in it and therefore there is a sustainability element to it all. Nigel said it probably would not matter if DCWW took a step back now because BWG are a CIC and self-sustaining and they could get funding from elsewhere. This is where the power is more than the water quality aspect, it has really come from the Beacons Water Group farmers working together.

Item 4 Review of Minutes and actions

35. The Chair confirmed that once the meeting minutes have been reviewed and formally agreed by the group, they will be published on the NRW website for the public to access. Therefore, it is important that the minutes are an accurate record of the meetings.

36. The group reviewed the previous meeting minutes from 21st November 2022. No comments or suggested amendments were received in respect of the November meeting minutes.

37. Bronwen Martin, NRW mentioned there was one outstanding action from the meeting held on 17th October 2022:

- AP Oct 07: Members to contact Marc Williams, NRW regarding support for the SBRI opportunity.
 - Reminder for members to get in contact with Bronwen or Marc regarding offers in kind, financial support etc. Members were also encouraged to get in contact should they want more information about the SBRI process.

Item 5 Matters Arising

38. Dav welcomed the group to discuss any matters arising from the previous meeting minutes, relevant documents or recent topics.

39. Dav mentioned the NRW Strategic Review of Charging (SRoC) consultation. Members have been provided with the link to the survey [Consultation on our regulatory fees and charges for 2023/2024](#). Dav reminded the group that this consultation closes on 7th January 2023. Rachel mentioned that this consultation is causing quite a lot of concern and the proposed increases have caused outrage within some of the NFU Cymru membership. Rachel said NFU Cymru will be working with their members to put in a response. However, for clarity NFU Cymru does not use the online survey facility provided by NRW for consultation responses. Rachel explained that they prepare a draft, send it to their members for consideration, and then they submit it as a document rather than a survey response. Dav recalled that NRW heard lots of concerns during the Winter Fair and NRW has also been answering questions and queries.

40. Bronwen mentioned that Katy Simmons, NRW is in the process of putting together the next edition of the WLMF Sub Group Newsletter 'Our Land, Water and Air'. Katy will be

circulating a test copy of the Newsletter to members and has asked everyone to provide feedback on this draft by 14th December 2022. The newsletter will be finalised and published on 15/16th December 2022.

AP December 03: Members to provide feedback on the draft newsletter by 14th December 2022.

Item 6 Any Other Business

41. The next WLMF Sub Group meeting will be in January 2023, the date will be confirmed in due course.

AP December 04: Bronwen Martin, NRW to set meeting dates for 2023.

AP December 05: Members to suggest potential agenda items and discussion topics for future meetings, please forward them to the WLMF Sub Group mailbox.

42. Dav wished everyone a great Christmas and a happy New Year.

Close meeting