Referral Report

Agricultural Sustainability Support and Advisory Programme (ASSAP)

Advisors working with ASSAP offer a free and confidential advisory service to farmers. Where farmers agreed to take part in the programme the advisor carried out a farm assessment and recommended mitigation actions targeted to address the water issues identified by the Local Authority Waters Programme (LAWPRO).

Mitigation Actions Recommended

During a farm visit the advisor identifies issues that need mitigation measures implemented to reduce the risk to water quality. These are categorised as Risk 1, 2 or 3. Risk 1 issues are those that are most likely to impact on water quality and relate directly to the water quality issues identified by LAWPRO. Risk 2 and 3 are other issues on the farm that may require management or improvement which would indirectly lead to improvement in water quality.

Reporting

Waterbody scale reports are a summary of the issues impacting water quality and the mitigation actions implemented by farmers. They are a synthesis and interpretation of individual referral reports. They are prepared by ASSAP advisors following review with the catchment scientist.

Accompanying this report are summary details of the mitigation actions recommended and implemented in this waterbody. This report and the accompanying tables will be uploaded to the WFD App.

Summary

PAA	**Clashawley**
No. of waterbodies	**3**
Water body name	**Killenaule_Stream_010**
Number of referrals	2
Referral codes	**Killenaule_Stream_010_RFL123 / Killenaule_Stream_010_RFL004**
Advisor	**Claire Mooney & Matthew Moylan**
Scientist	**Sinead Barrett**
Date	

1 Referral 1:

1.1 Background information

Table 1: Information relating to PAA and waterbody name, draft and referral code, and referral date.

PAA	Waterbody	Draft referral code (LAWPRO excel code)	WFD App Referral code	Referral date
Clashawley	**Killenaule_Stream_010**	Killenaule_Stream_010_RFL004	RA0000166 RA0000165	20/02/2020

1.2 Referral evidence and significant issue

The Killenaule Stream_010 is an At Risk waterbody. The EPA undertakes monitoring at two monitoring stations in the Killenaule Stream_010. Although water quality is at Good status at the Br nr St Johnston Castle Monitoring Station Monitoring Station (Killenaule Stream_010_001), it decreases to Moderate status upstream at the Br 1 km S of Killenaule Monitoring Station (Killenaule Stream_010_002). Irish Water undertake water quality monitoring at two monitoring stations, upstream and downstream of Killenaule WWTP.

The significant issues affecting water quality are phosphate (from agricultural sources) and nitrate (from agricultural sources). This referral codes above relates to mitigating against diffuse sources of nitrate.
This referral covers the catchment upstream of Killenaule Stream_010_002. Focus on nitrate loss from freely drained soils and high PIP ranking areas for nitrate to surface water (i.e. high risk of diffuse sources of nitrate reaching surface waterbody).

1.3 Measures implemented following advice

ASSAP visited 8 farms in these referral areas. The High Risk issues identified on these farms were:

Dirty yards	**1**
Clean & Grey Water management	1
P Loss Through Overland Flow	1
Sediment Loss	1
Drinking Points & Stream Fencing	4
Farm Roads and Gateways and underpass	1
Buffers	6
Identify and Mange Critical Source Areas	2
Organic Manure Timing, Location & Method	4
Timing - Early & Late N and Phosphorus	4
Sloped Fields	4
Chemical Fertiliser Spreading	1

The priority measures recommended were:

Improved management of collection and storage of farm wastes
Separation of clean, grey, soiled and dirty water in farmyard
Improved management of collection and storage of farm wastes
Management of Critical Source Areas (CSA's)
Riparian Buffers - Fenced/Unfenced
Prevent livestock access to waters
Avoid application at high risk times
In field grass buffers
Precision application of nutrients at correct rate

Implementation Report

Number of Risk 1	Agreed	Commenced	Complete	Ongoing	Not Started
53	47	9	3	17	24

Based on the revisits that have been completed , we have seen that approximately 50% of the measures have been implemented, more engagement will be required to get implementation of the of whether all measures have been implemented. It is hoped by ASSAP that if these measures are implemented that water quality will improve.

1.4 PAA Communications

Description of farmer meetings, discussion groups, KT events, media engagements, newsletters, training courses etc undertaken by ASSAP advisors in water body. Dairy co-op advisors to detail their engagements separately.

Where relevant, include a description of broader engagements in the PAA in addition to the one-to-one farmer-advisor farm assessments.

In addition to one to one farm visits the following engagement pieces took place with farmers

A community farmer meeting were both held locally where current status and issues are highlighted to attendees, and to highlight what kind of measures would be needed in an area to improve water quality.

Discussion Groups: Throughout 2020- 2022 4 discussion groups were visited by ASSAP in the area and were given a session on water quality and issues in the area to farmers within the PAA.

Local Radio: Water quality has 4 slots per year that gives us an opportunity to highlight issues in catchments.

1 PAA newsletter was issued to the farmers in the PAA.

Events: A signpost event took place in the catchment in 2022.

Courses:

- 4 AETS courses in summer 2022,
- 6 P-Build Up 2019-2021
- 6 Nitrates Derogation 2020 – 2022

Tirlan

Regular communications and technical articles are sent directly to Tirlan milk suppliers through the monthly farm focus magazine as well as online platforms. In addition, technical video messages are published weekly on such topics as water quality, soil fertility and nutrient management. ASSAP dairy advisors attend local on farm discussion groups with suppliers as well as involvement with the Future Farm signpost programme. In addition, Tirlan are providing financial incentives to suppliers to protect water quality with the Sustainability action payment where measures such as fencing of watercourses, having an ASSAP water quality plan in place, having an NMP plan in place will all help protect and improve water quality.

1.5 Barriers to implementation of measures

Information relating to the barriers that prevented the implementation of mitigation measures recommend by ASSAP – at referral scale.

List of potential barriers:
Time (e.g., measure not implemented because farmer must wait until next growing season),
Cost (e.g., farmer can't afford to implement a measure),
No. of farms that have not engaged
Behaviour (e.g., reasons for no or lack of engagement or participation)
Social (e.g., age, health)
Policy (e.g., existing policy prevents the farmer from implementing a measure),
Non-ag issue (e.g., LAWPRO confirmed the issue is due to a pressure other than agriculture, such as WWTP),
Time lag (e.g., waiting for nutrient levels to decline after nitrate mitigation measures are implemented),
Unknown issue (e.g., where ASSAP and LAWPRO agree the pressure or issue has not been identified)

Describe any barriers to implementation of measures, see suggestions above, and any others.

The barriers that has prevented the implementation of measures as recommended by ASSAP include the following:
It is felt that part time farming is playing a big part in mitigations not being addressed. Most of the farmers visited are working off farm and tend to travel a distance for work leaving very little time for implementation of measures.
Some of the actions have been implemented for example complying with no spreading of slurry along buffer zones along streams. This is difficult to quantify and will require land management change practices. Majority of slurry spread is by agricultural contractors. These contractors need to be informed by farmers of areas sensitive to run off etc. to bring lasting water quality improvement in catchment.

The age profile of the farmers in the area is also a contributing factor as well as the amount of land that is rented in the catchment, people who are renting land on a short term basis are not willing to invest in the provision of alternative water supply and fencing when they may be out of that piece of land at very short notice.

Farmers are waiting for environmental schemes to be launched as see if they can get paid for doing such management changes or capital investment works.

The majority of Drystock farmers do not have surplus funds to carry out fencing or closing of drinking points along streams. In most cases there is no alternative source of water for livestock. This will involve significant funds to implement these measures with no grant aid currently available.
Farm structure is also a problem as many farms have several land blocks. This also increases capital requirements on holding to implement works.
Switching to protected UREA has been slow in the catchment, due to cost and uncertainty as to the benefits of it, although in the last year the use of protected urea has increased in the catchment.

1.6 Referral 1 Conclusion

Conclusion relating to the process from measures recommended to barriers to implementation – at referral scale.

This PAA is continuing into the 3rd cycle and more revisits need to be completed to see the level of implementation to see a declining level of nitrate in the river.

So far what can be seen is the uptake of buffer margins have been slow in the catchment, but is showing signs of improvement. Alteration to farm roads along watercourses, has commenced in most instances, it seems that farmers are doing this work as they are due to carry out routine maintenance to roads.

However it is considered that until measures to address the critical source areas closest to the monitoring point are implemented agriculture will continue to be a pressure in this catchment.

2 Referral 2:

2.1 Background information

Table 2: Information relating to PAA and waterbody name, draft and referral code, and referral date.

PAA	Waterbody	Draft referral code (LAWPRO excel code)	WFD App Referral code	Referral date
Clashawley	**Killenaule_Stream_010**	Killenaule_Stream_010_RFL123	RA0000150 RA0000149 RA0000113	20/02/2020

2.2 Referral evidence and significant issue

From LAWPRO referral

The Killenaule Stream_010 is an At Risk waterbody. The EPA undertakes monitoring at two monitoring stations in the Killenaule Stream_010. Although water quality is at Good status at the Br nr St Johnston Castle Monitoring Station Monitoring Station (Killenaule Stream_010_001), it decreases to Moderate status upstream at the Br 1 km S of Killenaule Monitoring Station (Killenaule Stream_010_002). Irish Water undertake water quality monitoring at two monitoring stations, upstream and downstream of Killenaule WWTP.

The significant issues affecting water quality are phosphate (from agricultural sources) and nitrate (from agricultural sources). This referral relates to mitigating against point sources of ammonia and phosphate.

2.3 Measures implemented following advice

Information relating to the final mitigation measures agreed and implemented – at referral scale. Use data from Farm Assessment records to detail measures implemented.

ASSAP visited 11 farms in these referral areas. The High Risk issues identified on these farms were:

Dirty yards	**2**
Drain Connection from Yard to Water	1
P Loss Through Overland Flow	6
Sediment Loss	1
Drinking Points & Stream Fencing	5
Farm Roads and Gateways and underpass	4
Buffers	6
Identify and Mange Critical Source Areas	2
Organic Manure Timing, Location & Method	4
Timing - Early & Late N and Phosphorus	4
Sloped Fields We**ather and Fertiliser Management**	4 1

The priority measures recommended were:

• Improved management of collection and storage of farm wastes
• Separation of clean, grey, soiled and dirty water in farmyard
• Informing and educating farmers
• Management of Critical Source Areas (CSA's)
• Riparian Buffers - Fenced/Unfenced
• Prevent livestock access to waters
• Informing and educating farmers
• Adhere to buffer zones and safeguard zones
• Avoid application at high risk times

Implementation Progress Report

Number of Risk 1	Agreed	Commenced	Complete	Ongoing	Not Started
81	71	14	5	46	16

Based on the revisits that have been completed, we have seen that many of the measures have been implemented, there are some outstanding issues such as access to watercourses, It is hoped by ASSAP that if these measures are implemented that water quality will continue to show improvement.

Measures to address point source issues have been completed and are ongoing in all cases and it is hoped that once these are complete that ammonia levels will be rectified in the catchment

From the revisits that have been completed fencing of watercourses has started on some farms, however there are some farms where this has not commenced. Behaviour in relation to more suitable times of the year for spreading slurry seems to be slowly changing but the main challenge faced here is the dependency on contractors.

2.4 PAA Communications

Description of farmer meetings, discussion groups, KT events, media engagements, newsletters, training courses etc undertaken by ASSAP advisors in water body. Dairy co-op advisors to detail their engagements separately.

In addition to one to one farm visits the following engagement pieces took place with farmers

A community farmer meeting were both held locally where current status and issues are highlighted to attendees, and to highlight what kind of measures would be needed in an area to improve water quality.

Discussion Groups: Throughout 2020- 2022 4 discussion groups were visited by ASSAP in the area and were given a session on water quality and issues in the area to farmers within the PAA.

Local radio water quality has 4 slots per year that gives us an opportunity to highlight issues in catchments.

1 PAA newsletter was issued to the farmers in the PAA.

Internal meetings and stakeholders meetings e.g. LAWPRO South East, South East Regional Operational Meetings, IFA,ICMSA and working groups, private consultants

Events: A signpost event took place in the catchment in 2022.

Courses:

- 4 AETS courses in summer 2022,
- 6 P-Build Up 2019-2021
- 6 Nitrates Derogation 2020 – 2022

Tirlan

Regular communications and technical articles are sent directly to Tirlan milk suppliers through the monthly farm focus magazine as well as online platforms. In addition, technical video messages are published weekly on such topics as water quality, soil fertility and nutrient management. ASSAP dairy advisors attend local on farm discussion groups with suppliers as well as involvement with the Future Farm signpost programme. In addition, Tirlan are providing financial incentives to suppliers to protect water quality with the Sustainability action payment where measures such as fencing of watercourses, having an ASSAP water quality plan in place, having an NMP plan in place will all help protect and improve water quality.

2.5 Barriers to implementation of measures

Information relating to the barriers that prevented the implementation of mitigation measures recommend by ASSAP – at referral scale.

List of potential barriers:
Time (e.g., measure not implemented because farmer must wait until next growing season),
Cost (e.g., farmer can't afford to implement a measure),
No. of farms that have not engaged

Behaviour (e.g., reasons for no or lack of engagement or participation),
Social (e.g., age, health)
Policy (e.g., existing policy prevents the farmer from implementing a measure),
Non-ag issue (e.g., LAWPRO confirmed the issue is due to a pressure other than agriculture, such as WWTP),
Time lag (e.g., waiting for nutrient levels to decline after nitrate mitigation measures are implemented),
Unknown issue (e.g., where ASSAP and LAWPRO agree the pressure or issue has not been identified)

The barriers that has prevented the implementation of measures as recommended by ASSAP include the following:
It is felt that part time farming is playing a big part in mitigations not being addressed. Most of the farmers visited are working off farm and tend to travel a distance for work leaving very little time for implementation of measures.
Some of the actions have been implemented for example complying with no spreading of slurry along buffer zones along streams. This is difficult to quantify and will require land management change practices. Majority of slurry spread is by agricultural contractors. These contractors need to be informed by farmers of areas sensitive to run off etc. to bring lasting water quality improvement in catchment.

The age profile of the farmers in the area is also a contributing factor as well as the amount of land that is rented in the catchment, people who are renting land on a short term basis are not willing to invest in the provision of alternative water supply and fencing when they may be out of that piece of land at very short notice.

Farmers are waiting for environmental schemes to be launched as see if they can get paid for doing such management changes or capital investment works.
Majority of Drystock farmers do not have surplus funds to carry out fencing or closing of drinking points along streams. In most cases there is no alternative source of water for livestock. This will involve significant funds to implement these measures with no grant aid currently available.
Farm structure is also a problem as many farms have several land blocks. This also increases capital requirements on holding to implement works.
Switching to protected UREA has been difficult as product has not readily available in agricultural merchants yards when farmer purchases fertiliser products. Although in the last year the use of protected urea has increased in the catchment.

2.6 Referral 2 Conclusion

Conclusion relating to the process from measures recommended to barriers to implementation – at referral scale.

This PAA is continuing into the 3rd cycle This water body is continuing into the 3rd WFD cycle it will require ongoing engagement with agricultural advisors to highlight issues to bring about land management changes.
Funding to implement measures is required to fence off drinking points and provide alternative sources. Gap regulations allow for drinking points for the vast majority of farmers based on current stocking rates.

The application and timing of organic manures and chemical fertilisers especially on drystock farms need to change. Traditionally they are spread in one / two applications during the year. Current management can contribute to Nitrogen and Phosphate losses to catchment. This will require significant behaviour change. need to be completed to see the level of implementation to see a declining level of phosphate in the river. Also on dairy farms a delay in starting spreading needs to occur there is a need to move away from Mid January applications of slurry and fertiliser so as to match application with better growth.

Based on the revisits that have been completed , we have seen that some of the measures have been implemented,. It is hoped by ASSAP that if these measures are implemented that water quality will improve.

Measures to address point source issues have been commenced and it is hoped that once these are complete that ammonia levels will be rectified in the catchment

Also from the limited number of revisits that have been completed fencing of watercourses has started on some farms, behaviour in relation to more suitable times of the year for spreading slurry seems to be slowly changing but the main challenge faced here is the dependency on contractors.

Also the uptake of buffer margins have been slow in the catchment, but is showing signs of improvement. Alteration to farm roads along watercourses, has commenced in most instances, it seems that farmers are doing this work as they are due to carry out routine maintenance to roads.

3 Waterbody conclusion for WFD App (optional)

Based on Measures Implemented (to be copied to "Progress Description" in EPA App)

*This section allows for a consideration **at water body scale** of all referrals. Referral conclusions (text from Sections **1.6 Referral 1 Conclusion** and **2.6 Referral 2 Conclusion** etc above) can be combined into a water body scale summary or kept separate and entered into the WFD App at referral scale, as appropriate.*

Action

Implementation Organisation	**ASSAP – Teagasc**
Planned Completion Date	**31/03/2022**
Progress Description	**The significant issue in this water body is elevated Ortho-phosphate. The main pathway for P loss is overland flow. LAWPRO identified 4 referral areas based on fieldwork evidence and high PIP P maps.** **ASSAP visited 17 farms in these referral areas. The High Risk issues identified on these farms were:** • **Slurry Storage 1** • **Clean & Grey Water management 1** • **P Loss Through Overland Flow 12** • **Drinking Points & Stream Fencing, 9** • **River Bank Erosion 1** • **Culverts/River Crossings 1** • **Drinking Troughs 1** • **Farm Roads and Gateways and underpass 2** • **Organic Manure Timing, Location & Method 11** • **Sloped Fields 3** **The priority measures recommended were:** • **In-field grass buffers 11** • **Riparian Buffers - Fenced/Unfenced 9** • **Prevent livestock access to waters 9** • **Adopt latest manure application techniques 7** • **Avoid Application at high risk places 10** • **Avoid application at high risk places (CSA's) 10** • **Avoid application at high risk times 7** • **Precision application of nutrients at correct rate 8** **All of the actions recommended have been implemented except Riparian Buffers in 5 instances. Riparian buffers were not implemented for the following reasons: excessive cost and land rented.** **In addition, no measures to mitigate a critical source area close to the water body monitoring point have been implemented to date, however the landowner has agreed to install fencing and restrict access to the river if funding becomes available.**
Action Progress	**New / Completed / Superseded**
Action Completion Date	**31/03/2022**
Updated Date	**Date of data entry**
Updated by	**WFD App User name**

Figure 1 Example of ASSAP WFD App entry

4 Appendix 1 Referral structures

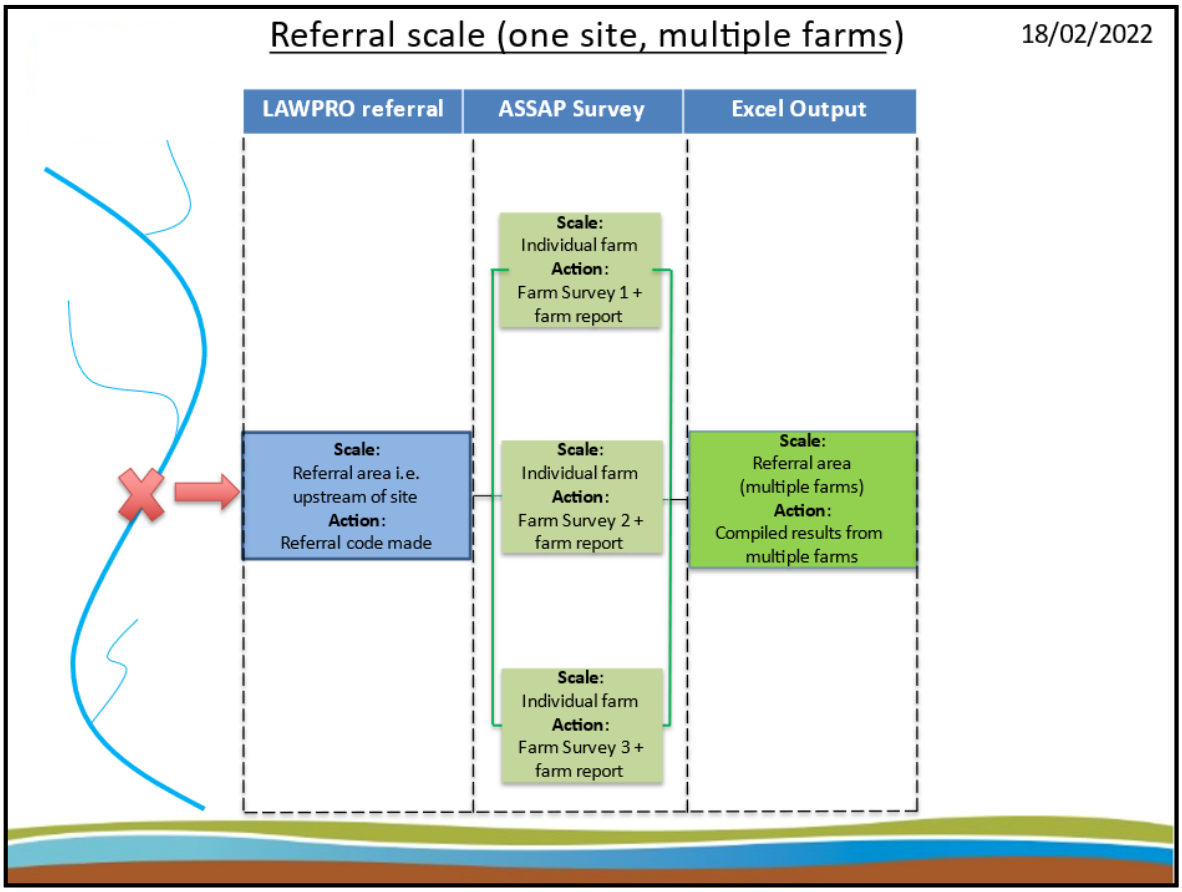

Figure 2 Image showing the hypothetical structure of referral scale. One referral is typically one site in the waterbody that has shown evidence of impact and the referral area around it may contain multiple farms i.e., referral scale ~ one site, multiple farms.

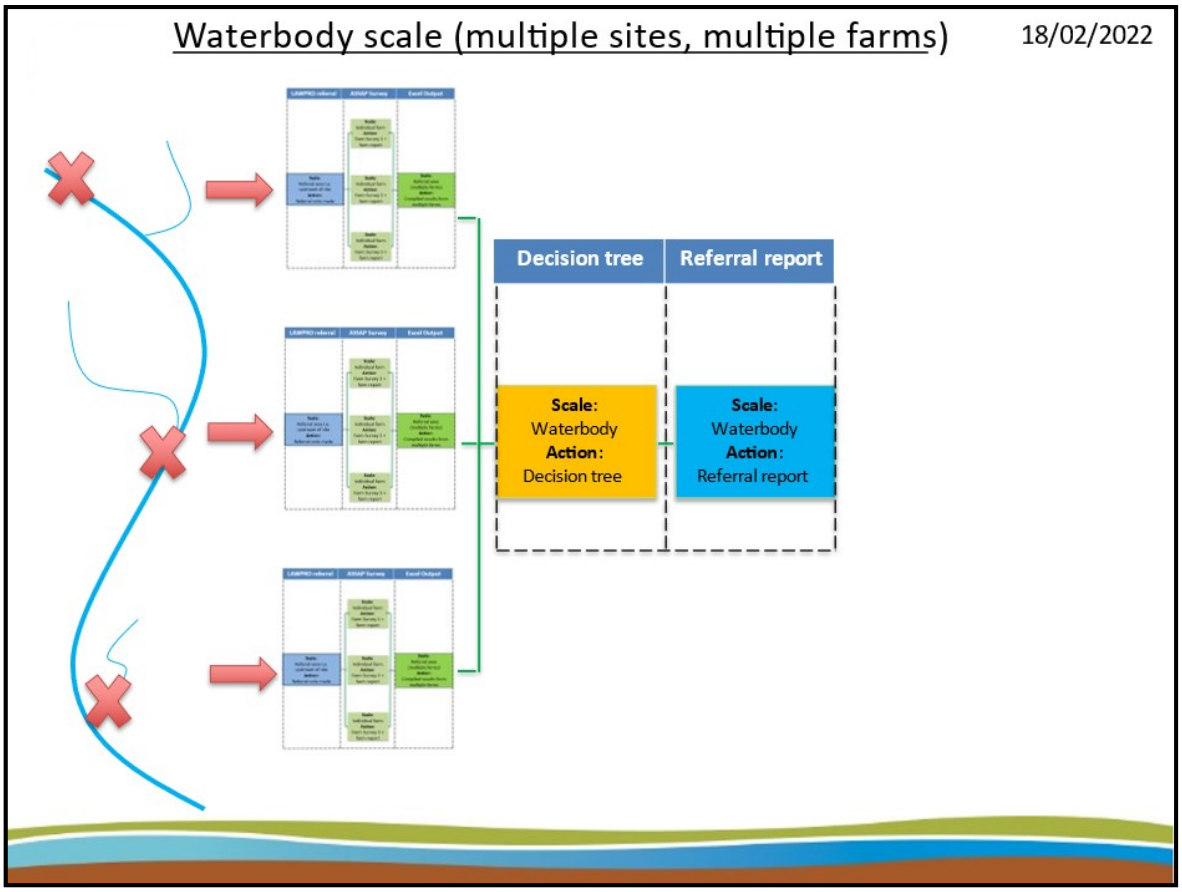

Figure 3 Image showing the hypothetical structure of waterbody scale. This document reports at waterbody scale but uses referral scale details and results. Waterbody scale contains multiple sites and referral areas i.e., waterbody scale ~ multiple sites and multiple farms.

5 Appendix 2 Handover process (decision tree)

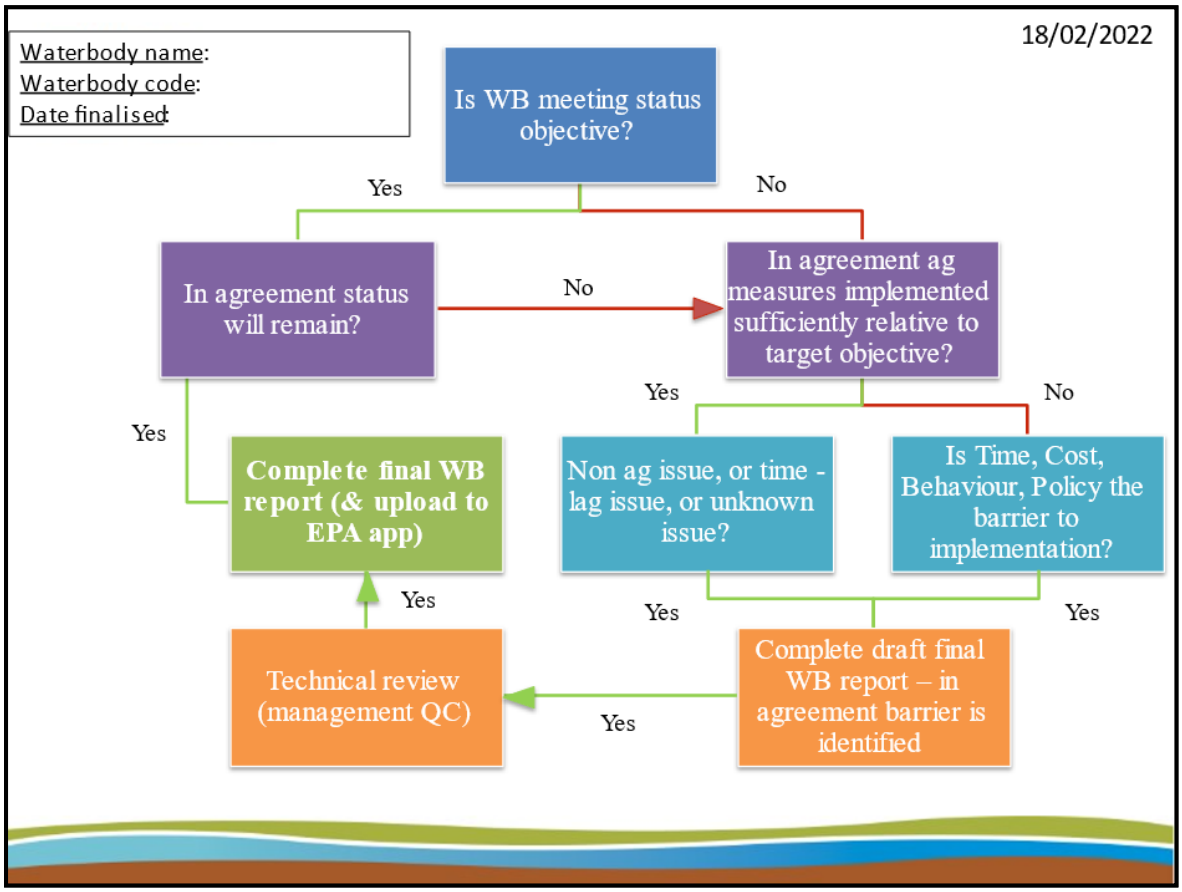

Figure 4 Decision tree used by advisor and scientist to discuss measures and any barriers to measures identified. This is used as part of the handover process.