

AgNav: a new way to measure

The new digital platform, AgNav, will facilitate sustainability assessments farm by farm

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Building on years of collaboration Teagasc, ICBF and Bord Bia have integrated Teagasc lifecycle assessment (LCA) models into the ICBF software infrastructure. This makes it possible to calculate the carbon footprint of Bord Bia-certified farms.

Farm data in existing databases (e.g. ICBF and Bord Bia) will be collated in AgNav to create a “snapshot” of each unique farming system. Using existing data for individual farms streamlines the assessment process, improves the user experience and enables more precise capture and analysis of data.

The AgNav platform is being developed using a co-design process where a series of workshops with the development team, farmers and advisors deliver feedback on accessibility, applicability interpretability and recommendations.

The AgNav platform provides the user with a live decision support tool that communicates the benefits of best practice adoption on a product, area and total enterprise basis. This tool will assist the farmer and advisor to create a sustainability plan tailored to each farm's circumstances.

Step by step

1 Assess

A farmer conducts the Bord Bia sustainability survey, providing farm activity data on manure management, fertiliser, concentrate feed and more. A similar survey will be incorporated into the AgNav platform in the future.

The farmer can then, either on his/her own or in consultation with a farm advisor, establish the current farm performance against a number of environmental sustainability indicators on the AgNav platform.

2 Analyse

Farmers and/or advisors will



Eamonn Lynch, dairy advisor, Dungarvan; PJ Brennan, dairy farmer from Ballysaggart, Lismore, Co Waterford, and Dr Seamus Kearney, Teagasc, climate action and sustainability advisor Dungarvan, discussing PJ's farm emissions figure as generated from AgNav.

identify opportunities for changes to practices on farm that could result in improved performance. They can determine the impact of implementing these practices by using the “Forecast” decision support tool available within the AgNav platform.

3 Act

Following the identification of the most appropriate actions for their farm, a farmer and/or the advisor will use the “Action Planner” to create a sustainability plan for the farm.

This plan will include targets and timelines for implementation/completion of specific measures. This plan will act as a guide for farmer/advisor engagement and demonstrate each farmer's commitment to delivering on the action plan.

Future development

The initial phase of the AgNav platform will be available for beef and dairy farms which are Bord Bia quality-assured and have signed up for the Teagasc Signpost advisory programme.

The scope of AgNav will expand to accommodate all cattle systems as well as other enterprises (e.g sheep, tillage, pigs, forestry).

Future phases of AgNav will also cater for all farmers regardless of their affiliation to AgNav partners. It will be available to Teagasc clients but also non-client farmers.

The initial phase of the AgNav platform focuses on greenhouse gas and ammonia emissions. Future phases

will include other environmental indicators such as biodiversity, water quality, carbon sequestration, etc.

Where possible, AgNav will establish data flows with relevant databases to improve user experience and assessment quality.

Conclusions

AgNav is a digital platform that will assist farmers to implement practices that have been identified to improve overall sustainability (environmental, economic and social).

AgNav will inform farmers of their current performance across a range of indicators. The farm-specific action plan along with advisory services will help assist the farmer to implement positive changes.

What is AgNav?

- It is a new digital sustainability platform that will be used to create individual farm sustainability plans. It's currently in its first phase.
- The platform will collate data from existing databases which will improve the accuracy of each farm assessment.
- It will encourage and support farmers in implementing management practices that will improve the overall sustainability of their farming system.
- Supports clear communication of progress achieved on farms and provides a mechanism to measure progress towards overall targets for the agriculture sector.

and enhance sustainability

First-hand experience in Waterford

PJ Brennan farms at Ballysaggart, Lismore, Co Waterford with his mother Helen, his wife Tracey and his children Éile (four) and Sean (two). PJ is farming 42ha and is milking 70 dairy cows in 2023. In 2022 PJ delivered 549kg milk solids per cow to Tirlán. For 2023 PJ has 32 calves on farm (of which 16 are Friesian heifer calves) and 30 cattle (of which 14 are Friesian heifers).

PJ is part of the Ballyduff/Ballysaggart dairy discussion group who completed one of the first Signpost advisory workshops in the country. As part of the Signpost advisory workshop each farmer received their farm emissions number. "I liked getting the emissions figure for my farm as it allows me to see where I am on the start of my journey to reduce farm emissions," says PJ.

"AgNav showed that our farm was generating 428,426kg of CO₂ equivalent before we started to take on

any mitigation actions. I used 205kg nitrogen per hectare in 2021 which is my latest AgNav figure and 79% of that nitrogen was in the form of protected urea.

"It was great to be able to see that on my farm that this one simple action reduced my farm emissions by 6.8% while at the same time saving me thousands of euro compared to using CAN fertiliser.

"I use 18:6:12 as the compound fertiliser on my farm and my new goal is to get to 90% protected urea to reduce my emissions further."

Having used AgNav PJ has set other goals for the next 12 months. The aims are to:

- Reduce chemical fertiliser by 20% through correcting lime, P and K levels, and incorporating clover and multispecies swards.
- Increase protected urea to 90% of

chemical nitrogen spread on farm.

- Continue to spread all slurry using Low Emission Slurry Spreading.
- Spread 75% of slurry in spring and the remaining 25% after first-cut silage.
- Increase grazing season length by 10 days.

Combining these actions will reduce PJ's overall farm emissions to 378,921kg CO₂ equivalent. This represents a reduction in farm emissions of 11.5%. According to PJ: "These are all actions that will save me money as well as being good for the environment."



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