UCD School of Agriculture and Food Science

Agriculture and Food Development Authority

Agricultural Knowledge Exchange in a Changing World

Knowledge Transfer Conference 2024

Book of Abstracts

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Teagasc
Agriculture and Food Development Authority

UCD Dublin

Contents

Session 3:

Building momentum with farmers on the climate and environment challenge

Keynote Speaker

Owen Murphy (trading as Irish Wildlife Services) is a wildlife management specialist, specialising in ornithology and the conservation of ground nesting birds. He is currently Senior Project Manager for the Breeding Waders EIP. Irish Wildlife Services has fulfilled contracts such as Curlew Advisory Officer for the Curlew Conservation Programme, Warden for Lough Ree and the mid-Shannon Callows for Midland's Region of NPWS as well as many contracts for private ecological consultants. Owen is a Farm Planner on the NPWS Farm Planners panel and has written plans in relation to Breeding Waders and the associated habitat management. He specialises in Predation Risk Management, Conservation Detection Dog handling and training, surveying, report writing, landowner engagement, media, education, and public outreach. He sits on Westmeath County Council's Biodiversity Working Group as an independent specialist and also produces a Conservation themed Podcast series on Athlone Community Radio.

Session 1:
Agricultural Education – keys to unlock innovation

Chair: Dr Sinéad Flannery, UCD

9:40 - 10:40

A National Induction Programme for Agricultural Educators in Ireland

Anne Maria Aird, Sinéad Flannery

Background: Agriculture has undergone significant change with regard to production, consideration for the landscape and the environment. Agricultural education has a pivotal role to fulfil informing and enabling future generations of farmers to improve agricultural practices and mitigate their impact on climate, flora and fauna, water, and air quality. Equally, education has undergone transformation in terms of programme delivery, instructional techniques, and the role of the teacher. Therefore, this research explores the professional induction needs of agricultural educators as teachers involved in the delivery of vocational agricultural education and training programmes to young farmers in Ireland.

The research objectives of this study are as follows:

1. To investigate the professional induction needs of agricultural educators in Ireland
2. To assess the potential of an integrated professional induction programme to meet the professional development needs of agricultural educators in Ireland
3. To design an induction programme as a training intervention for agricultural educators
4. To make recommendations on the professional induction of agricultural educators in Ireland.

Research Methods: This research used a qualitative methodology in the form of in-depth semi-structured exploratory interviews (n=12) conducted with Education Officers and Knowledge Transfer specialists in agricultural vocational education and training and knowledge transfer sectors, as well as with key stakeholders in the area of policy development for national agricultural education.

Key Findings: Key findings emerging from the research included perceptions of and attitudes to agricultural educator induction, the perceived impact of an induction programme and the challenges and supports related to its implementation. These findings were used to advise the development of a draft induction programme: Talamh – "Cultivating Educators". Major components of the Talamh programme include engagement in a specified period of induction, completion of a minimum period of post-qualification professional practice and confirmation by experienced fellow professionals of fulfilment of five benchmarks. The Talamh programme can be strengthened to ensure that agricultural educators benefit from the essential resources, professional development opportunities and collaborative networks to enhance their teaching on agricultural education programmes.

Talamh
"Cultivating Educators"

Implications: To ensure that agricultural students' learning and attainment continues to be the focus of agricultural education programmes, it is essential that policy debates centre on the agricultural educator and on how their teaching role is addressed in the context of professional development in order to improve teaching quality, educator satisfaction and student achievement. Prioritizing the development and implementation of an induction programme for agricultural educators is necessary to ensure that new agricultural educators have standardised and structured pedagogical knowledge, skills, and expertise for their teaching roles.

The development and modernisation of the Teagasc Competency Framework for agricultural advisors and educators

Rachel Clancy, Jim Kinsella

Background: The evolving and expanding agri-food sector in Ireland demands continuous upskilling of agricultural advisors and educators. Within this environment of change, Teagasc Agricultural Development Officers' (ADO) competency profiles, developed over a decade ago, no longer fully reflect the shift towards knowledge exchange and participatory learning. Recent studies recommend updating these profiles to ensure they meet current industry requirements. A modernized competency framework will address skill gaps, enhance performance management, and provide clear career pathways, ensuring that professionals are equipped to support the evolving needs of the sector.

The research objectives of this study are as follows:

1. Identify and analyse the competencies required by agricultural advisors and educators to carry out their role successfully.
2. Review and update the current Teagasc Competency Framework.
3. Develop a competency wheel which can be included in an induction toolkit for new agricultural advisors and educators.
4. Make recommendations for the use of the new competency framework.

Research Methods: A mixed methods approach was used, integrating quantitative and qualitative techniques. Data collection occurred in three stages: a survey of twelve agricultural advisors and twelve educators, interviews with two regional managers and two college principals, and a focus group with members of Teagasc management, CDSU members, two advisors, and two educators. This informed updates to the Teagasc Competency Framework and competency wheel development.

Key Findings: The study identified the evolving roles of agricultural advisors and educators, emphasizing the key competencies required throughout their careers. Surveys, interviews, and a focus group discussion highlighted core competencies, including technical knowledge, communication, planning, organization, and adaptability. The updated Competency Framework comprises thirteen competencies, grouped into three categories: Delivering Results, Embracing Change, and Collaborating for Success. These competencies align with the dynamic nature of advisory and educational roles. A competency wheel was developed as a visual representation of these findings, offering a comprehensive guide to the skills necessary for success in agricultural advisory and education (Figure opposite).

Implications: The practical implications enable integration of a competency wheel for professional development. Policy implications include alignment of competencies with evolving agricultural demands and promoting continuous professional development. Theoretically, the study supports the shift towards facilitative approaches and active learning, emphasizing technical, interpersonal, and leadership competencies for agricultural advisors and educators.

Competency Wheel for Advisors (left) and Educators (right)

Two circular diagrams, representing the 'Competency Wheels for Advisors and Educators'. The "Advisor" wheel focuses on skills pertinent to advisory roles, while the "Educator" wheel outlines competencies essential for teaching & educational roles. Both wheels are divided into 3 color-coded segments. Each segment highlights the key competencies required for their respective roles. There are 13 key competencies, which vary slightly between Advisor and Educator, categorised as 'Delivering Results, Embracing Change & Collaborating for Success'. Ten attributes are demonstrated on the outer section of the Competency Wheel.

The layout and structure of both diagrams are visually similar, emphasizing the parallel importance of various competencies in both professions.

Examining attitudes to the inclusion of a farm diversification module in the Green Cert Programme

Serena Gibbons, Brian Leonard

Background: In response to the growing economic and environmental challenges facing the agricultural sector, farm diversification has emerged as a key strategy for securing farm incomes. This study explores the perspectives of Teagasc Green Cert students, education and advisory staff, on the potential integration of a farm diversification module into the Green Cert curriculum. The module aims to provide students with the skills and knowledge necessary to pursue diversification on their farms. The research findings indicate strong support for the inclusion of this module. Moreover, the study may serve as a valuable resource for future training initiatives, enhancing the existing 'Options' programme in farm diversification.

The research objectives of this study are as follows:

1. Investigate the attitude of students to the inclusion of a farm diversification module in the green cert programme
2. Assess the attitude within Teagasc education and advisory staff to the inclusion of a farm diversification module
3. What module content and delivery would be envisaged in a farm diversification module?
4. Identify how familiar the students are with "Options for the family farm programme"

Research Methods: A mixed method research approach was employed in this study using both quantitative and qualitative methods. Quantitative method was in the form of a student survey, this was followed by a qualitative method, using focus groups with staff from the Teagasc agricultural education and advisory units.

Key Findings: The response from students and staff to the inclusion of a farm diversification module was overwhelmingly positive. The green cert elective Start Your Business (SYOB) module is working well and shows great potential to evolve to a dedicated farm diversification module. Teagasc continues to be the preferred source for students seeking advice on farm diversification. However, staff delivering the "Options for the Family Farm" programme reported lack of resources and training as a challenge in effectively providing this service. Furthermore, advisors have had to prioritise work relating to agricultural schemes, resulting in reduced time and resources allocated to supporting farm diversification initiatives.

Respondents' attitude to looking at farm diversification on their home farm

Implications: Enhance the Level 5 SYOB module to include a focus on farm diversification in next green cert course validation. Provide students with comprehensive information on farm diversification while strengthening collaboration with LEOs and LEADER. Ensure robust training on farm diversification for all Education and Teagasc staff delivering advice in this area.

Identifying, Supporting and Attracting a Diversity of Learners to Teagasc Further Education and Training Courses

Marc McKeon, Monica Gorman, Brian Morrissey

Background: Teagasc, the Irish Agriculture and Food Development Authority, provides integrated research, advisory, and training services to the agriculture and food industry. In response to global market changes, it continuously strives to improve its educational programmes, focusing on diversity and inclusion. Teagasc launched its Diversity and Inclusion Strategy in 2020 and conducted a diversity audit in 2022. Ireland's changing demographics, highlighted by its high proportion of foreign-born residents, present challenges for educational institutions. Minority groups, including women, LGBTQ+, people of colour, and people with disabilities, often face barriers in education. This research examines student and teacher perspectives on diversity within Teagasc's vocational agricultural programmes and proposes recommendations for improvement.

The research objectives of this study are as follows:

1. To describe the lived experience of diversity among mainstream and non-mainstream learners in Teagasc full time and part time courses
2. To define the diversity and inclusion concerns of prospective applicants to Teagasc courses who might be characterised as minorities in agricultural education
3. To develop recommendations based on the findings of the study and international best practices for nurturing diversity and inclusiveness within Teagasc education and training settings.

Research Methods: This study uses a mixed-methods approach, combining quantitative student surveys and qualitative interviews. Surveys gather demographic data and perceptions from students and secondary school staff. Semi-structured interviews with diverse students explore their experiences. Data analysis includes descriptive statistics, inferential analysis, and thematic interpretation to identify key diversity and inclusion trends.

Table 1 **Categories of Diversity (could select > 1 category)**	**Frequency**	**Percent**
None of these categories apply	179	57.9
Belong to a religion (i.e. Buddhist, Christian, Hindu, Jewish, Muslim, etc.)	100	32.4
Have an intellectual disability.	22	7.1
Identify as LGBTQ+.	7	2.3
Identify as an ethnicity/nationality that is not White Irish.	4	1.3
Have a physical disability	4	1.3
Identify with a minority/underrepresented group that is not stated above (indicate in "other").	2	0.6
Identify as an Irish Traveller: belong to indigenous Irish ethnic group.	0	0.0
Total Responses	**318**	**102.9**

Profile of respondents according to categories of diversity.

Key Findings: Findings from the study revealed challenges within agricultural education, shedding light on enduring gender disparities, apprehensions regarding harassment and bullying, and the intricate nature of fostering inclusivity. Participants voiced concerns regarding gender dynamics, their age, and uncertainties surrounding the accommodation of diverse learner needs. The research underscored the pivotal role of educators in shaping positive and inclusive student experiences. Insights taken from participant narratives and survey data emphasized the diversity and inclusion concerns within educational settings, highlighting the importance of tailored solutions to address the challenges encountered by learners in vocational agricultural education.

Implications: Recommendations stemming from the findings of the study include enhanced stakeholder engagement, mitigating bias, promoting transparency and inclusivity, and prioritizing time management in research endeavours. By implementing these recommendations, educational institutions can strive towards fostering equitable and inclusive learning environments for all students, thereby advancing the objectives of this study.

Session 2:
People matter the social dimension of advisory and education

Chair: Dr Brian Leonard, UCD

11:10 - 12:30

Farm Succession & Transfer – A team approach

Bryan Twomey, Tomás Russell, Kevin Connolly, Brian Leonard

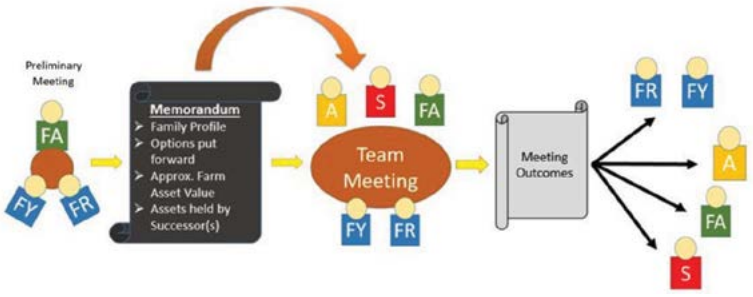
Background: Farm succession is often delayed beyond its optimum timing due to hesitancy around broaching the decision-making process. The eventual transfer is often then rushed at a later stage as a consequence of an impending tax deadline or family circumstances, forcing a transfer without adequate pre-planning. The complex taxation of farm transfers, ever changing land use policies and farm operational considerations require focused and timely advice from a range of professional advisors. However, such is the multidisciplinary nature of the service provision, that contradictory and duplication of advice often arise, as well as important issues 'falling between the cracks'.

The overall aim of this study is to identify and develop a multi actor approach to support farm family succession decision making. The objectives identified to do this are as follows:

1. To identify the difficulties experienced by both professionals and farm families within the succession planning process
2. To identify the utility of a multi actor team approach
3. To develop and design a multi actor team approach based on the needs and expectations of both farm families and professionals
4. To pilot and evaluate a multi actor team approach to succession planning and make recommendations for best practice.

Research Methods: At the outset an exploratory phase was carried out using surveys with farm families and professionals followed by a participatory phase consisting of interviews and focus groups with key actors in the AKIS. An action phase then culminated in the piloting of the approach with the major stakeholders.

Key Findings: The study found that intra familial issues continue to complicate planning for farm succession and that the inefficiencies anticipated of a fragmented advisory service were exemplified. The findings justified the development of a multi actor team approach, one which consisted of a phased format. Within this muti actor, the study identified the need for sufficient preparation by farm families and professionals in advance to address potent intra familial issues and encourage high quality advice. The findings also uncovered the requirement for a support tool for facilitators of the approach to help provide structure and consistency and enhance the level of planning progression achieved. The figure below illustrates the sequence of the developed approach which commences with a preliminary meeting, from which a memorandum document is compiled and circulated. Following this preparatory work, the team meeting itself takes place generating documented outcomes which offer a roadmap for all actors to work with going forward.



The Succession Team Approach developed and piloted
FA=Farm Advisor FR=Farmer
FY=Family A=Accountant
S=Solicitor

Implications: This study contributes new theoretical conceptions of multidisciplinary advising of family farm businesses. In addition to the approach developed (Figure above), the study produced practical guidebook and support tool outputs for farm families and KT advisors. From a policy perspective the study identifies new strategies to supporting farm families during the professional planning phase.

Part time farmers engagement with advisory services and how it can be improved

Claire Dolan, Peter Doolan, Brian Leonard

Background: Part-time farmers are a diverse cohort that is said to have low levels of engagement with their advisory services. Part-time farmers are most likely suckler or beef farmers. As a result, farmers opt to work off-farm to supplement the household income due to the lower profitability levels of these enterprises. Due to these off-farm work commitments, part-time farmers find it difficult to allocate time to engage with their advisory services due to their lack of spare time. A knowledge gap surrounds these farmers and their engagement with their advisory services, as there has been a lack of in-depth studies.

The research objectives of this study are as follows:

1. To determine the targets and goals of part-time farmers
2. To explore what communication and KT methods are appropriate for part-time farmers
3. To examine if the current suite of digital knowledge transfer tools is suitable for part-time farmers
4. To identify the barriers that hinder part-time farmer engagement with their advisory services.

Research Methods: Quantitative data for this study was collected through a farmer survey. Qualitative data was collected by conducting in-depth interviews with part-time farmers and advisors working directly with part-time farmers as part of their client base. The quantitative results served as the foundation for designing the qualitative aspect of this study.

Key Findings: The culmination of the study results proposed the definition of a part-time farmer to be as follows: *Any farmer who works more than 20 hour's off-farm on average per week and forms the primary source of their income.* The key findings surrounding the targets and goals of a part-time farmer reveal the resounding message from the farmers that profit is among their primary goals. The study concluded that advisory services should implement changes to increase the engagement of part-time farmers. The changes suggested include out-of-hours advisory services (outside of 9-5), on-farm events aimed explicitly at part-time farmers, and discussion groups for part-time farmers.

Table 1 **Rank**	*Farmer Survey*	*Farmer Interviews*	*Advisor Interviews*
1	Increase farm profit	Increase farm profit	Continue the tradition of farming
2	Improve the technical efficiency of farm	Improve the technical efficiency of farm	Improve the technical efficiency of farm
3	Continue the tradition of farming	Increase stock numbers	No other issue arose in advisor interview
4	Increase stock numbers	Meet environmental targets	No other issue arose in advisor interview
5	Meet environmental targets	No other issue arose in the farmer interview	No other issue arose in advisor interview

Targets and goals of part-time farmers for the next ten years, in order of importance, according to each research method

Implications: The complete results presented information on part-time farmers that will begin to fill the knowledge gap surrounding part-time farmers. Although the basis for their engagement is scheme work, the acknowledgement and openness of the part-time farmers towards engaging with technical knowledge is positive. The requirements of this group demand simple and flexible knowledge transfer methods and tools. It should warrant increased engagement among the part-time farming population if the relevant changes are made.

Examining Dairy Farmer Decision Making Process Regarding Core and Non-Core Tasks

Aoife Seymour, Martina Gormley, Monica Gorman

Background: The dairy farming in Ireland is rapidly evolving, with an increase in herd sizes and a pressing need for labour due to expansion. Farmers are increasingly embracing technology and efficient practices to address the challenges of labour and time management. The research, involving case studies and a survey, unequivocally revealed that decision-making among farmers is heavily influenced by family setups and personal attitudes, with task outsourcing emerging as a vital strategy for better time management. The adoption of technology, while beneficial, is hindered by a lack of time for learning, underscoring the urgent need to prioritise quality of life and efficient task organisation.

The research objectives of this study are as follows:

1. Develop an understanding of the value dairy farmers place on their time
2. Determine the decision-making process around task organisation
3. Establish the key beliefs and attitudes held by dairy farmers that determine what tasks give them the best value for their time.

Research Methods: This research examines factors affecting farmers' decisions on time and task allocation, utilising a mixed methods design for comprehensive insights. Initial qualitative case studies on dairy farmers led to a survey exploring efficiency and work-life balance themes. Findings aim to inform guidelines supporting farmers and advisors in effective farm management.

Key Findings: This research delves into the decision-making processes of farmers regarding time and task allocation, employing a mixed methods approach to capture both qualitative and quantitative insights. The study identified key themes such as efficiency and work-life balance stemmed from family setup and personal attitudes towards decision making on task organisation and adoption of technology. Farmer's attitudes towards new technologies concluded that they are a source of pride and status, and some have the attitude that they are to save on labour and save time. Task outsourcing has a critical influence on time and task decision making on farm. There is an increase of awareness that farmers value quality of life beyond the farm gates. The ultimate goal is to use these insights to develop practical guidelines and tools that support farmers and advisors in optimising farm management and achieving a sustainable work-life balance.

Implications: The dairy industry is encouraged to focus on work/life balance, promoting the use of Precision Livestock Farming (PLF) and task organisation. Teagasc is advised to develop programs for farmer wellbeing, advising on work-life balance, mental health, and efficient farm management. Further research on farm task perspectives and automation's impact is needed.

To evaluate the Teagasc podcast as a digital advisory method and to make recommendations for future development

John Mahon, Tomás Russell, Kevin Heanue, Catherine Egan

Background: Podcasts are consumed across the world in many ways and for many different reasons that range from entertainment and social to educational and instructive purposes (Chan-Olmsted & Wang, 2022; McClung & Johnson, 2010). Within agriculture, podcasts have been recognised to be potentially useful due to the ability of users to multitask while listening in such a practical hands-on career (Chivers et al., 2021). When using podcasts in agricultural extension, there are a number of important characteristics, these include Credibility, Relevance, Legitimacy, and Accessibility. Teagasc produce 6 podcasts, centred on the main farming sectors in Ireland. These are; The Dairy Edge, The OviCast, The Beef Edge, The Tillage Edge, The Pig Edge and The Environmental Edge.

The research objectives of this study are as follows:

1. Examine why and how farmers are currently consuming the Teagasc podcasts.
2. Gain insight into the podcast's influences on farming practices.
3. Examine how extension agents perceive the role and potential of the podcasts.
4. Identify opportunities for further development of podcasts.

Research Methods: The CRELE+ evaluation framework (Chivers et al., 2021) was identified as an appropriate framework to use in evaluating the Teagasc podcasts. The framework centres on 4 elements; Credibility, Relevance, Legitimacy & Accessibility. This studies research methodology involved surveys and focus groups of podcast listeners along with interviews and focus groups of podcast hosts.

Key Findings: This study highlighted podcasts as an effective tool for delivering information, advice, and updates to agricultural communities alongside a face-to-face extension approach. To be successful the Teagasc Podcasts must deliver practical advice in a timely and topical nature with a conversation style that contributes to listeners' ability to logically justify potential decisions and understand topics being discussed. The inclusion and involvement of farmers is recognised as a contributor to maximising the credibility, relevance, and legitimacy of the podcasts. The promotion of podcasts, by the producing organisation along with informal promotion by guests and other opinion leaders within relevant communities will also impact the accessibility of podcasts as well as their relevance and credibility amongst listeners.

Table 1 **"The practical nature of the Teagasc Podcasts contributes to their usefulness"**	**% Respondents**
Strongly Agree	50%
Agree	37.5%
Neutral	11%
Disagree	1.5%
Strongly Disagree	0

Listeners' views on the practical nature of The Teagasc Podcasts

Implications: A key output of this research is a list of recommendations for Teagasc to consider in progressing The Teagasc Podcasts. These recommendations also provide factors for other agricultural podcast-producing organisations to consider when creating podcasts. This research has identified that developing The Teagasc Podcasts may not only mean increasing listenership but also aiming to progress the podcasts impact on listeners.

Farm Safety Interventions to help advisors promote safety with livestock

Ciaran Kinahan, Sinéad Flannery, John McNamara, Francis Bligh

Background: Farming is one of the most hazardous occupations in Ireland, with an average of 20 fatal accidents occurring annually (DAFM, 2022). Despite agriculture employing just 7% of the Irish workforce, nearly half of all workplace fatalities occur on farms (HSA, 2024). According to the 2022 Teagasc National Farm Survey, livestock were involved in 52% of farm accidents, resulting in 2,352 injuries. Cattle, particularly bulls, cows with newborn calves, and bullocks, pose significant risks. The increase in livestock-related accidents and fatalities is primarily attributed to inadequate handling facilities, risky behaviours around livestock, and a lack of attention to animal behaviour (HSA, 2020).

The research objectives of this study are as follows:

1. To design and develop a livestock safety workshop for agricultural advisors
2. To pilot the livestock safety workshop with agricultural advisors
3. To evaluate the livestock safety workshop with agricultural advisors
4. To identify changes in farmers' knowledge, attitudes, and behaviours towards livestock safety.

Research Methods: This study examines advisory interventions to improve livestock safety adoption on farms. Semi-structured interviews and surveys were conducted with farmers and Teagasc advisors using an exploratory mixed-methods approach. The research developed a livestock safety workshop based on advisor input, focusing on attitudes, behaviours, and knowledge. The study evaluated farmer engagement and adoption of livestock safety practices, involving 12 advisors and 33 farmers across Ireland.

Key Findings: The study findings indicate a rise in livestock-related accidents on Irish farms, highlighting the significant safety risks posed by livestock production systems. A one-day livestock safety workshop for agricultural advisors was highly effective in enhancing advisor's ability to promote safer practices among farmers. The research also demonstrated positive behavioural changes among farmers, underscoring the importance of targeted interventions, practical training, and tailored advisory support in improving livestock safety. These findings stress the need for structured, evidence-based approaches to address the growing safety challenges in livestock management, promoting a safer working environment in the Irish agricultural sector. The livestock safety interventions implemented for farmers (pictured) included a comprehensive calving risk assessment, a hands-on one-day livestock workshop. Additionally, YouTube videos on livestock safety provided continuous learning, complemented by an informative newsletter designed to keep farmers up to date with the latest safety practices and guidelines. Together, these interventions created a well-rounded, accessible, and impactful approach to enhancing livestock safety for farmers.

Implications: This study was integrated into the Department of Agriculture, Food and the Marine's (DAFM) Suckler Carbon Efficiency Programme (SCEP), a mandatory training for 17,000 farmers. The focus on livestock safety underscores the practical impact of the study findings, demonstrating its relevance in improving farm safety practices and influencing policy aimed at reducing risks in livestock management across Irish agriculture.

Livestock safety interventions which were used on farmers

Who does the farming community see as a credible mental health speaker

Paul Nangle, Tomás Russell, Alison Stapleton, Ella Joyce, Louise McHugh.

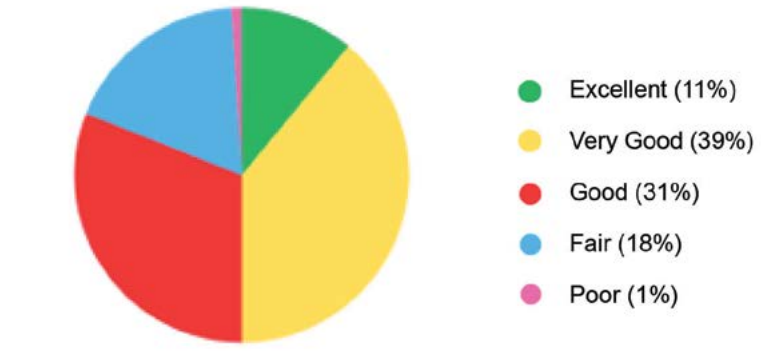
Background: The present study aimed to discover who the farming community sees as a credible mental health speaker, investigate the mental health stigma within the agricultural sector and create greater understanding of the most suitable personnel and channels to deliver suitable mental health messages to farmers. Rose *et al.*, (2023) highlights that 23.4% of farmers are at risk of suicide, highlighting the significant mental health challenges faced by this demographic of people. Between 2014 and 2020, suicide was the highest proportions of mortalities than any other farm accident, Russell *et al.*, (2022) explains. Hammersley *et al.*, (2021) discusses how the stigma around breaking the tradition is relentless as well as the stigma around mental health which can lead to this as it is considered weak or non-masculine.

The research study objectives are:

1. Examine credibility around mental health speakers
2. Investigate the stigma around mental health concerns within the Agricultural sector
3. Provide recommendations on how to best deliver mental health messages to farmers.

Research Methods: This study employed an online and paper between-groups experimental survey design. After reading one of three possible vignettes (overemphasising, underemphasising, or taking a middle ground approach to discuss mental health concerns), 193 participants completed the survey. The rating scales for believability and trustworthiness, Credibility Questionnaire, the Senders of Mental Health Information and Channels of Mental Health Information scales and Stigma and Self-Stigma Scales were used in the survey.

Key Findings: This study found that believability, trustworthiness, and credibility differed significantly across groups. Findings from this study show that the speaker who downplayed farmers' mental health concerns was rated as significantly less believable, trustworthy and credible than the speaker who took a middle ground stance and the speaker who overemphasised farmers' mental health concerns. There was no statistically significant difference in rated believability, trustworthiness and credibility between the speaker who overemphasised and the speaker who took a middle ground stance. This study also found that mental health stigma did not differ significantly across groups.



Mental Health Status of Participants (n=193)

Implications: Tailoring mental health advice and training to the unique requirements of farmers is crucial for ensuring their engagement and adoption of resources. The formation of evidence-based interventions could have major implications in reducing the issue of mental health among the hard-working farming community.

Session 3:
Building momentum with farmers on the climate and environment challenge

Chair: Dr George Ramsbottom, Teagasc

1:30 - 3:30

Improving the effects of Results-Based agri-environmental Payment Schemes (RBPS): Lessons from Ireland

Gary Goggins, Monica Gorman

Background: Results-based agri-environment schemes can deliver superior environmental, agricultural, and societal outcomes compared to traditional actions-based approaches. However, their success hinges on various factors, particularly the often-overlooked social and institutional context. This study evaluates a large-scale results-based pilot project in Ireland with 823 farmers, examining its outputs, outcomes and impacts within the prevailing contextual conditions.

The research objectives of this study are as follows:

1. Undertake an evaluation of the Wild Atlantic Nature RBPS pilot using transdisciplinary approaches
2. Generate new knowledge around the perceptions and experiences of RBPS design and implementation
3. Develop recommendations for the operation and improvement of future RBPS programmes

Research Methods: This study uses a mixed-methods approach. The main primary data collection instruments include surveys, material evidence and a validation workshop with Wild Atlantic Nature staff who worked on the RBPS. Four main surveys were administered to gather data from different groups (i.e. project team, farmers, advisors).

Key Findings: Well-designed results-based agri-environmental approaches provide a promising alternative to solely actions-based payments. Farmers, advisors and policy-makers support results-based approaches. Implementation of RBPS is enhanced by transdisciplinary cooperation. Consideration of the social and institutional context can improve project effects. Consideration also needs to be given to the potential for RBPS in intensive agriculture areas, as well as alignment of conflicting polices that are driving unsustainable expansion and homogenization.

Wild Atlantic Nature RBPS farm advisor training

Implications: The study underscores the importance of collaboration, clear multidimensional communication, and aligned efforts across diverse stakeholders for effective RBPS implementation. It provides recommendations for policy and practice for improving the effects of RBPS.

The monetary effects of adjusting farm management techniques and stocking rates to maximise climate and biodiversity ecosystem services in The Comeragh Mountain Uplands

Oliver Gill, Helen Sheridan, Catherine Keena, Catriona Foley

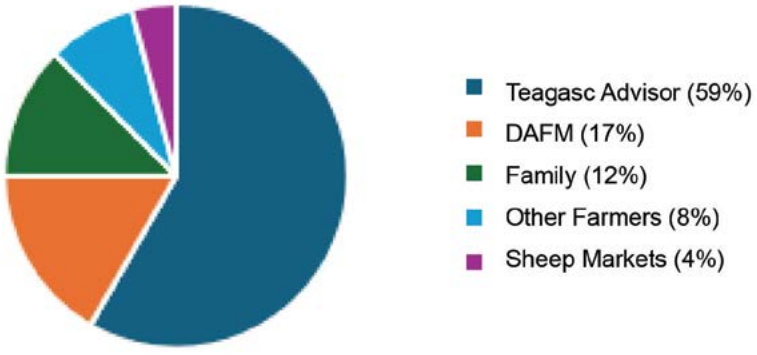
Background: The uplands host a range of seminatural habitats, therefore their management is essential to maintaining and promoting biodiversity (O'Keeffe and Crowley, 2019). Functioning upland ecosystems are also important for sustaining economic performance and human well-being by providing a range of essential ecosystem services (Costanza et al., 2014). Growing appreciation of the significant role farming activity plays in supporting biodiversity and the provision of a range of ecosystem services is reflected in the introduction of the new Agri-Climate Rural Environment Scheme. However, increasing the quality of habitats may involve additional costs arising from changes in the management necessary to maximise results-based payments.

The research objectives of this study are as follows:

1. To identify farming practices that influence the ecological condition of upland habitats
2. To investigate the monetary effect of management change needed to maintain/improve the ecosystem services in the uplands
3. To identify the challenges for Knowledge Transfer to advise in these scenarios and how advisors can be empowered in this area.

Research Methods: For this study, a mixed methodology was employed. The objectives were used to formulate the key informant interviews. After conducting a thematic analysis on these interviews, a questionnaire was then undertaken with farmers to gain a more in-depth knowledge of farm management practices, the challenges associated with these, and their effects on the uplands.

Key Findings: This study showed that some farm management practices or their lack of, is having a significant influence on the ecological condition of upland habitats. It also showed that direct payments continue to offer both positive and negative effects on the ecological condition of habitats. Whilst this was the case, the study stated that further monetary support is needed to maintain/improve the ecosystem services in the uplands. Furthermore, the study showed that whilst there are knowledge transfer barrier in the uplands, Teagasc's role is vital to their success as illustrated below. It also found that further strengthening in advisory support is required, particularly for inexperienced advisors in upland regions.



Key Decision Maker for Upland farmers (n=24)

Implications: Teagasc should provide targeted education and extension services to farmers, focusing on the importance of sustainable grazing, proper burning techniques and the ecological significance of upland habitats. Teagasc must invest in advisor training, with a focus on upland-specific knowledge and skills, to enhance their effectiveness in supporting farmers.

Investigating the attitudes held by Irish farmers regarding the specific elements of the organic certification process

Irene Shorthall, Jim Kinsella

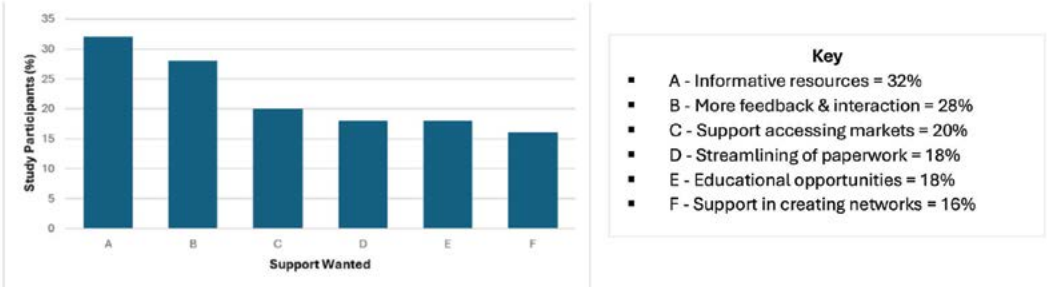
Background: The European Commission has set an ambitious target of having at least 25% of the European utilised agricultural area (UAA) farmed organically by 2030. Irish goals outlined in the National Irish Organic Strategy 2024-2030 align, with a target of at least 10% of Irish UAA converted to organic production by 2030. To achieve this goal, farmers must continue to convert to organic production, which necessitates attaining organic certification. To assist in increasing this percentage, this study aimed to assess the attitudes of farmers towards selected elements of the organic certification process and to identify areas within the certification process that require or would benefit from modification.

The research objectives of this study are as follows:

1. To understand the organic farming certification process in terms of more defined steps or elements which are important to farmers
2. To assess how organic farmers in Ireland view the selected elements of the organic farming certification process
3. To identify elements of the organic farming certification process that can be adapted in order to make the process more attractive and accessible to farmers

Research Methods: This research was carried out with Organic Trust, an organic certification body. A mixed-method approach was employed. Quantitative data was gathered through a phone survey with fifty organic farmers. The qualitative data was gathered through interviews with key informants, including two certification officers and two inspectors, and through case studies of two farmers.

Key Findings: The study found that the paperwork associated with organic certification is exceptionally challenging for farmers. Similarly, the application process was deemed too rigorous. There was a consensus that the conversion period is challenging, with certain facets being more challenging than others. The literature portrayed unfavourable views of certification fees, in contrast to no major concerns emerging from the study farmers. Similarly, while the literature revealed negative associations with organic inspections, the data collected suggested overwhelmingly positive attitudes towards inspections from farmers. While the majority of data collected demonstrated high levels of contentment with organic farming and the Organic Trust, the requirement for various supports was highlighted.



Distribution of farmers by the areas they feel they require support from Organic Trust (n=37)

Implications: This study will benefit the Organic Trust due to its direct reflection of their farmer membership. The research provides the Organic Trust with valuable member feedback on the current certification process, an indication of how members feel about prospective advancements, and an opportunity to learn about the potential supports their members may require.

An Investigation into the Adoption of a selection of the Signpost Programme 12 steps by Dairy Farmers in Limerick and Clare

Deirbhíle Browne, Jim Kinsella, Sean Mannion, Tom O'Connor, Aidan Bugler

Background: The purpose of the research is to determine dairy farmer's views of a selection of the promoted practices from the 12 steps of the Signpost Programme which attempt to help farmers reach the target of reducing Ireland's emissions in agriculture by 25% by 2030. Climate change is todays challenge for both current farmers and future young farmers. The Irish climate change advisory council noted that emissions in agriculture are projected to continue increasing. The Teagasc Signpost Programme aims to reduce gaseous emissions by improving water quality, maintaining and improving biodiversity on farms and reducing the costs of production whilst improving farm profitability and sustainability.

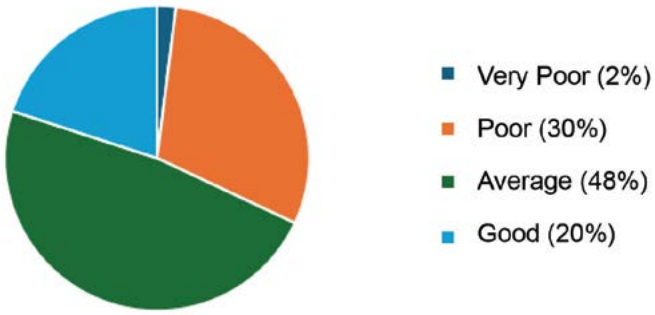
The research objectives of this study are as follows:

1. Determine the level of adoption of the three steps selected out of the Signpost Programme 12 steps by Teagasc dairy farmer clients in Limerick & Clare
2. Investigate the attitude of farmers towards adoption of the selected three Signpost Programme steps (EBI, protected urea & grass measuring)
3. Determine which of the Signpost Programme steps are most popular for farmers to actually adopt and use to improve their sustainability
4. Make recommendations on how to increase the uptake of the selected practices on dairy farms.

Research Methods: A mixed methods approach was chosen for this study. The study was carried out with fifty dairy farmers in Limerick and Clare who are members of Teagasc Dairy Discussion groups, and four Teagasc advisors in these same counties. A literature review was also carried out to give an overview of the researched topic.

Key Findings: The findings of this study showed that most dairy farmers had a positive perception on the selected steps. The majority had already adopted the Signpost Programme steps and are willing to adopt the steps into the future. They valued their discussion group membership and have a good knowledge of adoption of the steps and recommendations have been made based on this. It was also recommended that to encourage the uptake of the Signpost Programme steps by Irish dairy farmers, all dairy industry stakeholders must collaborate in delivering a unified message regarding their adoption.

Distribution of farmers by their self-reported levels of knowledge on the Signpost Programme 12 steps (n=50)



Implications: The development of demonstration farms and discussion groups to share farmer experience and peer-to-peer learning would lead to growth in farmer confidence in the Signpost Programme. Farming together with biodiversity and the environment is something that governments and the agricultural industry are going to have to focus on over the coming years if Ireland is to meet the targets set out for the agricultural sector.

Assessing farmers attitudes towards including a multispecies sward on their farm

Kate Purcell, Tomás Russell

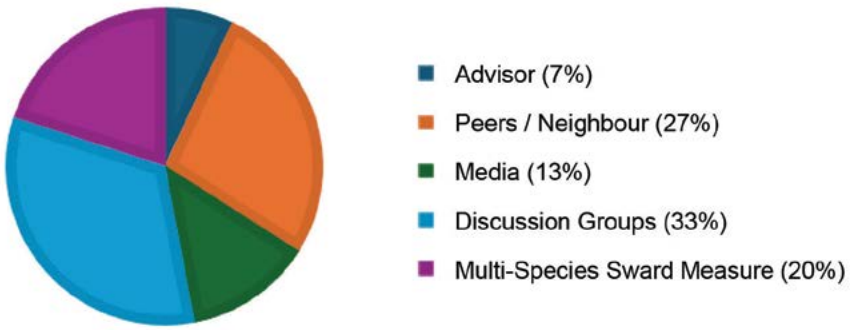
Background: The Multi Species Sward Measure, established by the Department of Food, Agriculture, and the Marine (DAFM) in 2021, incentivizes Irish farmers to adopt multispecies swards to reduce nitrogen fertilizer reliance and promote sustainable farming. Participants receive financial aid for establishment costs. This initiative is also included in the CAP Strategic Plan 2023-2027 as an eco-scheme measure. Despite these incentives, there remains a knowledge gap regarding successful establishment and maintenance of multispecies swards. This study aims to explore farmers' motivations, benefits, limitations, and management advice for adopting multispecies swards.

The aim of this study is to assess farmers knowledge and expectations of a multispecies sward in order to develop tailored advice on best practice management. This aim is to be achieved by fulfilling the following objectives:

1. To identify the main motivations of farmers to include a multispecies sward on their farm
2. To determine farmers opinions on their experiences of managing a multispecies sward on their farm
3. To outline the benefits, limitations and best practice for managing a multispecies sward to aid the development of an advisory tool

Research Methods: This study employed a mixed-methods approach. An electronic survey was administered to collect quantitative data from clients of Teagasc who either currently have a multispecies sward or plan to sow one in the coming year. Additionally, semi-structured interviews were conducted with industry experts to gather qualitative data on best practice when establishing and maintaining a multispecies sward.

Key Findings: Farmers primarily cited reducing chemical nitrogen use as their main motivation for sowing multispecies swards, viewing it as a key benefit. Influences for this decision included interactions in discussion groups and advice from agricultural advisors. Overall, 56% rated their experience with multispecies swards as successful or very successful, with no negative ratings reported. Additionally, 94% of respondents intended to retain the sward in the future. The main limitation identified was inadequate weed control; establishing the sward in a clean field with low weed presence was strongly recommended for success.



Distribution of farmers largest influence to plant a multispecies sward (n=20)

Implications: By assessing farmers' attitudes towards multispecies swards, policymakers will gain a clearer understanding of farmers' motivations, influences, and opinions on sowing these swards. This insight should increase the adoption of this innovation and facilitate its implementation in future schemes.

Investigating the Factors That Affect Famers Decision to Adopt Clover and Multispecies Swards

Niall Bailey, Sinéad Flannery

Background: With the ever-increasing focus on sustainability, especially in the agricultural sector, it is important for farmers to adapt their farming systems. This is a major challenge facing agriculture because of an increasing world population thus an increasing demand for food. Therefore, farmers must at the very least maintain production while taking the environment into account. They can do this by moving towards practices that have a reduced effect or even positive effect on the environment. Adopting clover and multispecies swards (MSS) can allow farmers to maintain grass production with lower chemical inputs in comparison to conventional perennial ryegrass swards.

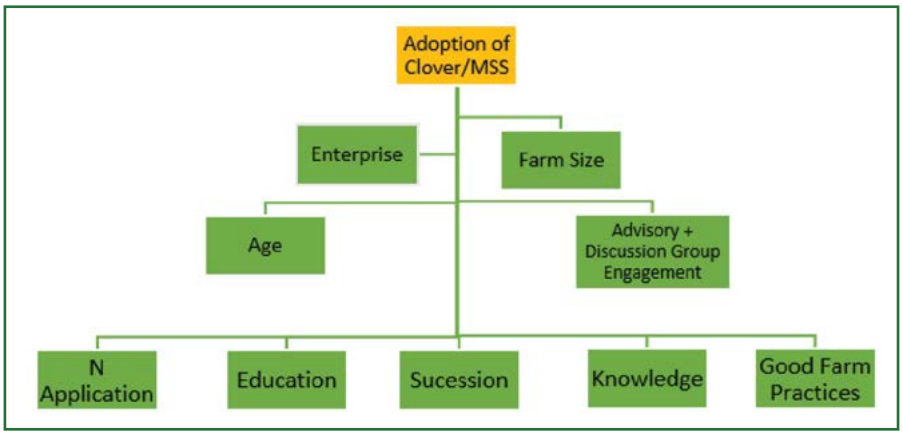
The research objectives of this study are as follows:

1. To develop an understanding of farmers opinions and attitudes towards clover and MSS
2. To assess farmers level of knowledge and understanding of clover and MSS
3. identify challenges facing farmers in terms of adoption for clover and MSS
4. To explore ways in which the rate of adoption of clover and MSS could be increased.

Research Methods: The primary research for this study was carried out using a mixed methods approach applying a combination of qualitative and quantitative methods to gather information and delve into the objectives of the study. Phase one of the research was the quantitative phase, and a survey was chosen for this method. Phase two of the research was the qualitative phase; semi-structured interviews was the chosen method for this.

Key Findings: The results of this study showed that the majority of the participants in both the survey and the interviews had a positive attitude towards clover and MSS swards. Additionally, 91.5% of farmers believed the main benefit of clover/MSS was a reduction in chemical N with only 29% of participants seeing a reduced impact on water quality as a benefit. There was a greater confidence in clover and perennial ryegrass swards in comparison to MSS. The study also showed a lack of knowledge and understanding towards clover and MSS with 69% of the participants rating their knowledge fair to very poor. Discussion groups and level of education had a positive effect on adoption, 90% of farms that had adopted clover/MSS were a member of a discussion group. Additionally, succession had a moderate influence on adoption with those who had identified a successor being more likely to adopt clover/MSS The results of the study showed the importance of educating farmers and making information readily available to them.

Implications: This study should allow education and advisory bodies to develop a plan to educate and teach farmers about the benefits of clover and MSS that will have a positive effect on the rate of adoption. Additionally, it will aid policy makers by allowing them to focus on the areas that require attention. Similarly, research can use this study to focus on MSS as highlighted by participants.



Factors influencing the Adoption of Clover/MSD

*These factors include enterprise type, farm size, farmer age, advisory and discussion group engagement, N application, education level, succession, level of knowledge, and good farm practices.

Farmer led identification of barriers and solutions to the adoption of clover on dairy farms

Emily Gowing, Paul Murphy, William Burchill, Stuart Childs, James Humphreys, Padraig McCormick

Background: Irelands Climate Action Plan aims to reduce emissions by 51% from 2021 to 2030, net-zero emissions by 2050 and 20% reduction in fertilizer use by 2030. Clover can biologically fix N and is a management tool to reduce emissions within the Teagasc MACC. Research highlights environmental, economic and animal performance benefits of clover. Despite advisory efforts, the adoption and utilisation levels of clover are relatively low. Over 95% of seed sold in Ireland is perennial ryegrass, and 4% is white clover. Understanding dairy farmers' resistance to clover adoption is crucial for sustainable pasture-based production and lowering chemical N by disseminating the knowledge of clover farmers.

The research objectives of this study are as follows:

1. Identify key barriers and challenges to clover adoption and usage faced by a sub-set of dairy farmers in Ireland
2. Identify current clover use, establishment and management practices being deployed by a sub-set of dairy farmers in Ireland
3. Determine the characteristics and specific management practices deployed by a set of dairy farmers in Ireland who have significantly reduced chemical N fertiliser usage on clover swards.
4. Collate the opinions and experiences of a focus group of dairy farmers and Teagasc dairy advisors to inform and improve KT messages to promote clover adoption on Irish dairy farms.

Research Methods: A mixed methodology approach, utilising qualitative and quantitative research methods was applied. A farmer survey was first distributed to identify the barriers. A focus group was conducted with 12 dairy farmers to address solutions. Finally, another focus group with 12 dairy advisors was conducted to develop KT messages.

Table 1	**No Clover**	**Same amount of N fertiliser**	**Spring N cut back in summer**	**Spring N only none onwards**
Education	n/a	Lower % of third level educated farmers	n/a	Higher % of third level educated
Winter Housing	Higher % ≥16 weeks	Higher % ≥16 weeks	n/a	Higher % ≤10 weeks
Grass Measuring	n/a	Lower % 41 walks + Higher % no walks	n/a	Lower % 1-20 walks, Higher % 41 walks +
Soils Sampling	n/a	Lower % regularly	n/a	Higher % regularly
Seed Rate	Lower % >1kg	n/a	n/a	Higher % >1kg

Chemical N strategies vs characteristics to determine significant associations

Key Findings: Non-adopter (n = 16) identified weeds as a key barrier and examples of other farmers using clover successfully would encourage them to adopt. Adopters of clover (n = 185), primarily reseed white clover (>1 kg/acre) on the milking platform in spring. The majority had less than 40% of paddocks in clover and the most common strategy is to apply chemical N in spring

and reduce N levels in summer on clover swards. The focus group highlighted increased milk solids and financial gains from reducing chemical N, while the advisors emphasized Teagasc research and KT tools as clover strengths. Opportunities for improvement include more research, expansion of KT messages and industry collaborations. Threats to address include mixed messages on clover advice, bloat solutions, and elements of KT messages.

Implications: The findings will inform Teagasc to improve existing KT clover messages and develop new messages, research, advisor training and KT tools. The research informs policymakers of practical methods of implementing clover regulations/ schemes to further improve clover adoption. The results aid collaborations with industry to achieve clover adoption and reduce chemical N usage.

Examination of a Multi-Actor, Local Approach to Increasing Lime Usage on Irish Farms: A case study in County Longford

Clodagh Bolger, Jim Kinsella, Tom O'Dwyer, David Wall

Background: Lime application is a key technology for increasing soil health, improving nutrient use efficiency and aligns with EU sustainability targets. Declining soil pH remains a significant challenge, affecting farm productivity across Ireland. Barriers to lime application include a lack of farmer awareness and education about lime, poor visibility of lime in co-operative stores, inhibiting farmer habits and attitudes, lack of availability of lime contractors and insufficient advisory attention (Mulligan, 2022). This study examined these issues through a multi-stakeholder localised approach to co-create and evaluate interventions aimed at promoting lime adoption in County Longford.

The research objectives of this study are as follows:

1. To understand the local barriers to lime adoption within the study area.
2. To implement a multi-actor approach aimed at increasing lime usage among farmers in the study area.
3. To select and utilise tools from the FAIRshare Multi-Actor Toolbox to create, implement and evaluate an advisory intervention to promote lime usage among farmers in the study area.
4. To propose how extension approaches might be strengthened to better support the adoption of liming practices by Irish farmers.

Research Methods: The study engaged with six stakeholders in County Longford to identify local barriers to lime application and propose potential strategies for promoting lime usage. Interviews with 15 farmers in pre- and post-intervention surveys provided insights into farmers' knowledge, attitudes and practices regarding lime application. Post-intervention discussions with stakeholders reflected on the intervention and proposed future recommendations.

Key Findings: Key stakeholders, including farmers, advisors, a contractor, a quarry and a dairy cooperative, can play important roles in co-creating interventions to increase lime use. Limited farmer knowledge and negative perceptions, financial constraints as well as weather and shortage of lime contractors were barriers to lime use. Post-intervention surveys revealed improved perceptions of lime usage amongst County Longford farmers, with importance ratings increasing from 7.1 to 8.8 on a scale from 1-10 (10=very important). Personalised communications, such as tailored lime recommendations to farmers, were the most impactful intervention tested. Furthermore, stakeholders emphasised the effectiveness of one-on-one interactions and suggested enhanced follow-up communications to encourage lime usage.

Table 1 **Material/Method used in intervention**	***Ability to influence the understanding of lime application**	****Preferred way of receiving information on lime**
Personalised letter with lime recommendation, farm map and soil sample results	4.5	4
Leaflet	4.3	3.8
Video	3.8	3.5
Follow-up Phone call	3.9	2.3

*1=very little influence, 5=highly influential

**1=least preferred, 5=most preferred

Farmers' Mean Scores on the Materials/Methods ability to influence farmers understanding of lime and Most Preferred Materials/Methods for receiving information on lime usage (n=15)

Implications: Tailored, local initiatives and stakeholder collaboration are essential for enhancing lime adoption. The participatory approach adopted in this research supports social theories on farmer engagement as well as collaborative problem-solving to drive practice change.

Financial barriers and contractor shortages highlight the need for targeted policies that support localised farmer assistance.

Improving advisory services for better soil health on dairy farms: Visual knowledge transfer tools to promote good soil management

Donal Brennan, Cathal Somers, Fiona Brennan, Monica Gorman, Saoirse Tracy

Background: In recent years extreme weather events such as rainfall and drought conditions are putting Irish farmers under pressure. This pressure is felt keenly in particular by intensive dairy farms as they need to provide forage for their cows to ensure high yields. The issue of damaging their soil has a direct impact on the growth of grass. The rationale of this study was to improve advisory services for better knowledge transfer in relation to soil health for dairy farmers. By involving both advisors and farmers in the study it was possible to get insights into what both parties want to learn about soil health and what they currently know.

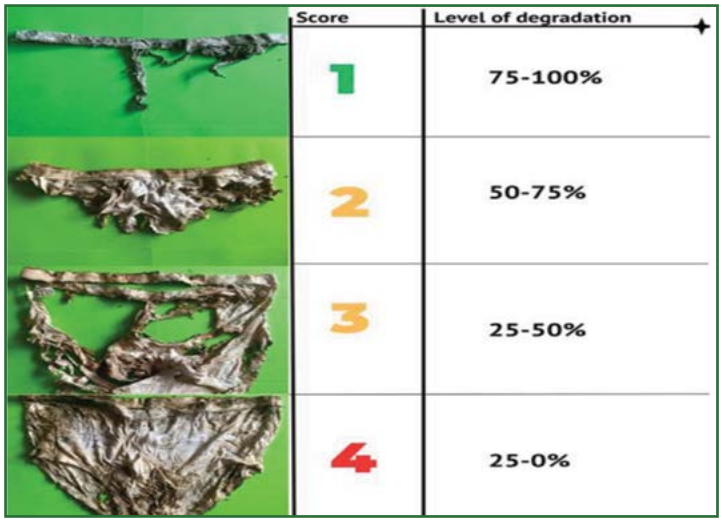
The research objectives of this study are as follows:

1. To assess advisors' level of interest in soil health, and the need for visual knowledge transfer tools for soil health
2. To assess the level of importance intensive dairy farmers attach to soil health, and their interest, and need, for better knowledge transfer
3. To test the use of 3 specific soil health tools with 20 farmers and use these to develop a bespoke visual soil health plan; and finally
4. To create a toolkit for advisors that will help them facilitate discussion groups on soil health.

Research Methods: This study used a mixed methods approach using surveys and semi structured interviews of advisors and farmers and the use of soil health tools on dairy farms in Waterford/ Kilkenny to test their effectiveness in the field. All this information led to the development of a soil health discussion group package that advisors can use in the field with farmers to disseminate knowledge on soil health.

Key Findings: This study pointed to the lack of training that advisors receive on soil health and their need for adequate resources through visual soil health tools. Farmers participating in the study had an interest in soil health and preferred visual learning in their discussion groups. The discussion group package was deemed to be useful for advisors and allowed for plenty of discussion. To the left is the soil health decomposition score card which was developed as part of this study as a new tool which will help advisors disseminate knowledge on soil health

Implications: Recommendations are to allocate more time to training of advisors on soil health, more information being released to farmers about the topic, the creation of a soil health specialist in the advisory service, and soil health not only examined on dairy farms.



Soil Health Decomposition Score Card

This score card is allows the user to score the condition of cotton underpants that have been planted in soil for a period of three months. This test gives a visual assessment of the level of decomposition carried out by microbes and is an indicator of the general health of the soil. The score ranges from 1 to 4 with 1 being 75-100% decomposed and 4 being 0 – 25% decomposed.

Creating space for communication on farmland biodiversity management in agricultural advisory services

Dr Aoife Leader, Jim Kinsella, Richard O'Brien

Background: The adoption of farmland biodiversity management (FBM) practices can contribute to the protection of biodiversity and, in turn, the improvement of agricultural sustainability. The important role that agricultural stakeholders play in bringing about such improvements is well recognised across EU and Irish policies, which have set ambitious targets for biodiversity conservation. Agricultural advisory services are recognised as pivotal in guiding farmer practices and decision-making. As such, existing advisory approaches, like discussion groups, represent a potential means of supporting farmers' FBM so as to contribute to reversing biodiversity loss.

The research objectives of this study are as follows:

1. Design and pilot a communication strategy on the topic of farmland biodiversity management for implementation with Irish dairy farmer discussion groups
2. Provide recommendations for the development of an engaging and feasible farmland biodiversity management communication strategy to agricultural advisory services.

Research Methods: An iterative, participatory action research approach was used to engage farmers, advisors and other relevant stakeholders in the co-design and piloting of a farmland biodiversity management communication strategy for dairy discussion groups. The methods employed included stakeholder co-design workshops, focus groups with participating discussion groups, and researcher reflections.

Key Findings: Through co-design and piloting, a series of opportunities and limitations regarding the FBM communication strategy were identified. The positioning of the strategy within pre-existing discussion groups was found to present an acceptable and engaging opportunity for communication on FBM, with recommendations such as utilising on-farm habitats for demonstration identified as means of integrating FBM as a core topic in group meetings. The practicality of a wider scale roll-out was identified as a potential limitation, with incorporating FBM into the working structures of advisors through regular training among the recommendations made to overcome this limitation

Implications: Employing multi-actor co-design in both the design and further development of a FBM communication strategy emphasised the need for continued iteration to ensure that the strategy can be practically implemented within the current agricultural advisory landscape and aligned to support contemporary policy.

Stakeholders participating in the co-design workshop following the armland biodiversity management communication strategy pilot

Notes

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