AGRI-ADVISORY SERVICES: THE ROLE OF CO-OPERATIVES

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EXECUTIVE SUMMARY

Agri-advice has always been central to agricultural development and innovation. As agriculture is now facing an increasingly challenging and transitionary period, there is a renewed focus on the role and nature of agri-advice and AKIS (Agricultural Knowledge Innovation Systems). A transition to sustainable agriculture requires an agri-advisory response which draws on the agency and knowledge of the farmer(s), is more tailored to a particular local context and encourages the sharing of knowledge and experimentation across farms in a landscape[1]. This farmer-centric co-operative and landscape-based approach requires existing institutions within that landscape to facilitate and enable such knowledge brokerage. Co-operatives, with their proximity to the farmer and local embeddedness, would seem to be well placed to be key players in this future agri-advice domain.

The purpose of this study was to explore the extent, nature, delivery and potential future development of agri-advisory services in agriculture co-operatives (dairy and livestock). The study was completed by the Centre for Co-operative Studies, UCC and was funded by the Golden Jubilee Trust.

The research involved online surveys with both Dairy and Livestock Co-operatives, a survey with next generation dairy farmers, interviews with intensive dairy farmers who are experimenting with environmental measures on their farms, interviews with key witnesses close to both dairy and livestock mart sectors and interviews with key witnesses from other co-operatives with a role to play in the agri-advisory context. These other co-operatives included FDC Group, IFAC, FRS and Cultivate Credit Unions. However, the primary focus of the research was on the Dairy and Livestock Co-operatives. The research was structured around the following three research questions;

1. What is the nature and extent of agri-advisory services offered in agricultural co-operatives?
2. What are the delivery and support structures for agri-advisory in agricultural co-operatives?
3. What is the potential for enhancing the agri-advisory service in agricultural co-operatives?

Nature and Extent of Agri-Advice Offered in Agricultural Co-operatives

Dairy Co-operatives: It was found that the dairy co-operatives offer a range of agri-advisory services,

[1] Department of Agriculture Food and the Marine. Food Vision 2030- A World Leader in Sustainable Food Systems, pg. 153-155. https://www.gov.ie/en/publication/c73a3-food-vision-2030-a-world-leader-in-sustainable-food-systems/#

from agri-advice related to farm inputs, environmental regulation and farm development. While many of the co-operatives had a dominant sales orientation in their agri-advice, not all had, and some balanced this with a regulatory and farm development orientation. This may indicate the beginnings in these co-operatives of a transition towards a different and more integrated type of agri-advisory service.

Livestock Co-operatives: It was found that livestock co-operatives are more focused on core business services rather than on additional advisory services. However, eight of the eleven marts surveyed offer additional farm development type services such as herd management planning/performance and specialised breeds knowledge or general education on the sector through newsletters, events and so on.

Delivery and Support Structures for Agri-Advice in Agricultural Co-operatives

Dairy Co-operatives: In terms of the delivery infrastructure of agri-advice, it was found that 71% of the surveyed co-operatives have a dedicated agri-advice team. In addition to personnel, technology can also play a role in the delivery and/or support of agri-advice. The Customer Relationship Management (CRM) example presented in Section 2.3.1.2 exemplifies this point. Co-operatives also have significant access to data which could be beneficial in advancing individual farm development (business and environmental) and in enabling a landscape-based approach to sustainability. With the latter, co-operatives in partnership with farmers could use technology to map the farms in their region (for soil health, biodiversity and so on) and based on measurements, develop more tailored, context-specific responses to enhancing sustainability in regional agriculture. This could be achieved through partnerships with EIP-Agri Projects such as BRIDE which has already developed such technology in conjunction with Farming for Nature. This study, as was the case with previous studies, found that farmers value peer-to-peer learning through discussion groups (formal and informal). However, it was found that 43% of the surveyed dairy co-operatives do not offer discussion groups. Introduction of discussion groups would be beneficial to all farmers, but in particular to younger farmers and those who are trying to experiment with environmental and biodiversity measures on their farms. In terms of delivery mechanisms, we also explored the role of external collaborations. It was found that surveyed dairy co-operatives which have a farm development or balanced orientation to the agri-advisory service are also more likely to be engaged in external collaborations. In addition, this engagement in external collaborations further increased the likelihood of the dairy co-operative holding a wider range of environmental related skills.

Livestock Co-operatives: While the livestock co-operatives do not have a dedicated agri-advice team, many of them still offer some aspect of agri-advice to their members. Those which offer advice tend to have particular expertise within the co-op and also have external collaborations. Much of the agri-advice arises in a more informal manner and therefore may not even be recognised as such. The livestock

marts, for example, are important social meeting points for the farmers, where informal knowledge exchange takes place between the farmers themselves and with the co-op staff. This social capital role is not only important in terms of farmer welfare, but may also contribute to the necessary development of a landscape-based approach to meet future socio-economic and environmental challenges facing agriculture.

Future Development Potential

Dairy Co-operatives: To explore the future opportunities for the development of agri-advice, next generation farmers were surveyed and dairy farmers who are experimenting with environmental and biodiversity measures on their farms were interviewed. Both of these groups access agri-advice from different sources (private, Teagasc, co-operatives and other farmers) with younger farmers in particular stressing the importance of farm development advice. An interesting finding here is that the younger farmers source and associate environmental and farm development advice with providers other than the co-operatives. This may, in the longer-term, reduce the relevance of the co-operative for these new farmers. In addition, farmers who are experimenting with environmental practices on their farms do not seem to source their environmental agri-advice from the dairy co-operatives. They indicated in the interviews that their agri-advice interaction with the co-ops is confined to 'milk price and inputs'. As most farmers will now have to further engage with environmental experimentation and practices on their farms, there would seem to be a missed opportunity here for the dairy co-operatives to both communicate what they are already doing beyond 'milk price and input advice' and to consider the further development of such services either in-house or through collaborations. Otherwise, the relevance of the co-operative may be reduced for these farmers. Hence, unless the dairy co-operatives align their agri-advice to the future needs of dairy farming, there is a danger of their reduced relevance into the future.

There was consensus among the farmers who are experimenting with environmental measures that this alignment away from a sales-driven orientation in agri-advice in the dairy co-operatives will be challenging. It will involve the re-building of trust (where it is not simply/solely about making a sale) and the enhancement of nature-based skills in the agri-advice team. The co-operatives, as well as developing their own skill in this space and collaborating with external players, need to draw on the significant knowledge bank of their own farmers and find innovative ways to leverage this knowledge. Regional collaborative models such as EIP-Agri Projects or the *Carbery Greener Dairy Farms*™ could help to bring all these requirements together. In addition, these types of collaborative initiatives are in line with the co-operation payment models in the New CAP 2023-2027. Hence, the territorial co-

operative payment models developed in the Netherlands could be explored by the dairy co-operatives for relevance to the Irish context.

Their collaborative and landscape-based structure and their access to data, give dairy co-operatives particular advantages in the provision of agri-advice. Dairy co-operative agri-advisory services need to unlock these resources for the betterment of the co-operative and their farmer members.

Livestock Co-operatives: The livestock co-operatives have two unique dimensions where they could play a greater role in agri-advice. Firstly, the informal meeting space of the mart would seem to act as an important platform for the delivery of agri-advice services in the mart and could be used to enable support for landscape-based approaches to agri-advice. Secondly, the livestock co-operatives' access to data would help both at an individual farm level and at landscape level.

Other co-operatives: The other co-operatives briefly explored in this report were FDC Group, IFAC, FRS and Cultivate Credit Unions, which have an embedded geographical network across the country. FDC Group, IFAC and FRS already offer agri-advice to greater or lesser extents. There is potential for greater collaboration between these co-operatives and with the dairy and livestock co-operatives.

Concluding Note

There is substantial agri-advice activity in co-operatives discussed in this report, with each co-operative offering different services and areas of expertise. An opportunity exists for collaboration across the co-operatives, especially within the context of a landscape-based approach to agri-advice. The research sets out to explore the current state of play in terms of agri-advice in the agricultural co-operatives and a number of other relevant co-operatives. It then points towards possible opportunities for the enhancement of the agri-advice service based on current services and the changing agricultural and environmental context. Further research is required to explore such possibilities and opportunities in more detail.

Recommendations

The key overall recommendations from the research are:

1. Agri-advice offered by agricultural co-operatives will be central in the transitioning to enhancing the sustainability of Irish agriculture. Greater acknowledgement of this role is required and thereby positioning the co-operative movement to give it a greater voice in the agri-advice space. Currently, the historical and contemporary role of co-operatives as agri-advice providers has only very limited recognition. This has consequences in terms of policy, future funding, co-op relevancy for farmer members and the development of the agri-advice business model in co-operatives.
    a. Strategically communicate on the current role and contribution of co-operatives to AKIS in Ireland.
    b. Develop a strategic position in terms of future contribution to agri-advice at an individual co-operative and sectoral level. Enhance position through research, strategic communications and media, lobbying avenues and through farmer members.

2. Co-operatives have key strengths in the provision of relevant agri-advice, such as a long historical record in this space, trust of the farmers, access to farmers and farm-level data, being landscape-based and having strong relationships with other stakeholders and co-operatives. Few other providers have these key strengths.

    a. Identify the key strengths as a sector and within individual co-operatives.
    b. Develop an agri-advice business model based on these key strengths.

3. Development of a more integrated agri-advice service: Shift from a sales-dominant to a more integrated orientation in agri-advice (sales, farm development, environmental - emissions and wider biodiversity) agri-advisory offering. This will ensure the relevance of the agricultural co-operative and allow for the development of a new agri-advice business model in the co-operatives. A focus on sales of inputs alone will become a less profitable income stream going forward, as the prices of such inputs continue to increase and regulation introduces restrictions on their use, farmers will be looking for alternatives.

4. Assign greater resources to the agri-advice function in co-operatives:
    a. Co-operatives should consider increased resourcing of this function in terms of personnel and training. While this will involve increased costs in the short to medium term, it will set the foundation for the enhanced relevance of co-operatives into the future.

5. Further enhancement of farm development agri-advice to farmers (this is something farmers need and are looking for, especially younger farmers). The co-ops' access to farmers and farm-level data could allow for the development of an efficient and effective business model for the delivery of this type of advice. This could offer an income stream as well as enhance the relevance of the co-op for the younger farmer.
    a. Greater offering of farm development and environmental services to farmers either within the co-operative or through collaboration with other providers.
    b. Research business models for the delivery of enhancing this type of advice.

6. Facilitate on-farm experimentation as part of the agri-advice model. On-farm experimentation is seen as an essential element of agri-advice and the transition to enhanced sustainability in the future (Bijman et al, 2023) and is a key part of the EIP and COOPERATION programmes. Co-operatives are better placed than other agri-advice providers to enable such experimentation.

7. Enhance environmental and nature-based skills within the agri-advice team:
    a. Dairy: Consider hiring an ecologist in-house or as a consultant.
    b. Develop environmental and ecological skills within the agri-advice team.

8. Give greater consideration to next-generation farmers in the agri-advice offering. Agri-advice is a key relationship bridge to the younger farmer and is central to the maintenance of co-operative relevancy.
    a. Research this group of farmers and their needs to develop an agri-advice response that is tailored to these needs (as younger farmers are not well represented on co-op boards and committees, agri-advice could be a relationship connection to this group of farmers).
    b. Consider delivery channels such as discussion groups, WhatsApp groups, use of technology and other platforms to encourage knowledge exchange between different generations of farmers and so on. This allows for the further development of peer-to-peer learning in the co-operatives.

9. Enhance external collaborations as part of the delivery model for agri-advice:
    a. Dairy and Livestock Co-operatives: Continue to enhance external collaborations, as such collaborations seem to increase the level of expertise in the co-operatives and encourage farm development and environmental services.
    b. Consideration of strategic collaborations between co-operatives for the enhancement of farm development agri-advice services to members in the dairy and livestock co-operatives. Such collaboration would enhance the development of the business model, in terms of income stream and service.

10. Enhance the use of data as part of the agri-advice function. Agricultural co-operatives have a particular advantage here in terms of their access to data.
    a. Both Dairy and Livestock Co-operatives have significant access to data on an individual farm and landscape base. This could be used for the creation of farm development support and advice services and to enable soil and biodiversity mapping on a landscape basis.
    b. Collaborate with entities which have developed landscape biodiversity mapping platforms. BRIDE and Farming for Nature is one such entity.

11. 'Think landscape' in the modelling of the agri-advice function:
    a. Co-operatives tend to be geographically embedded entities. There is a unique opportunity for co-operatives to be leaders in a landscape-based approach to agri-advice and agricultural development for greater impact.
    b. Creation of stakeholder groups within the Water Directive Framework Catchment areas to enable collaboration on the development of a landscape-based approach to the provision of agri-advice.

12. Enable local farmer-led environmental initiatives as part of the agri-advice function. Co-operatives are well placed to enable such initiatives and could perhaps be seen as conduits for funding:
    a. Research the feasibility of the Dutch Co-operative Payment Model for an Irish context.
    b. Co-operatives could have a role to play in the Agri-Environment Climate Measure (AECM) and Co-operation Projects (CPs) under Pillar 11 of the New CAP, coming into effect from 2023.
    c. Food Vision 2030 has called on co-operatives and private operators to replicate models such as ASSAP and EIPs across a range of environmental areas and to come forward with proposals in this regard.

ACKNOWLEDGEMENTS

The authors would like to thank the Golden Jubilee Trust for funding this research. We would also like to thank all the research participants from the co-operatives, namely the Dairy Co-operatives, Livestock Marts, FDC, IFAC, FRS Network and Credit Union Cultivate and other organisations such as Teagasc, Department of Food, Agriculture and Marine, South Kerry Development Partnership and key witnesses from various EIP-Agri Projects. We would also like to thank the farmers who participated in this research. Sincere thanks to Sinead Farrell and Ray Doyle, ICOS for their patience and guidance during this research. In addition, we would like to thank Professors Emeritus Michael Ward and Denis Lucey for sharing their many insights into agricultural co-operatives and for their vision and stewardship of the Centre for Co-operative Studies at UCC over the years.

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Acronyms/Abbreviations

AAS: Agricultural Advisory Services

AC's: Agricultural Co-operatives

AECM: Agri-Environmental and Climate Measure

ASSAP: Agricultural Sustainability Support and Advisory Programme

ACA: Agricultural Consultants Association

AES: Agri-Environment Schemes

AKIS: Agricultural Knowledge and Innovation System

EIP: European Innovation Partnership

EU: European Union

CPs: Co-operation Projects

LAWPRO: Local Authority Water Programme

RBPS: Results-based Payment Scheme

WFD: Water Framework Directive

Definitions

AAS: Agricultural Advisory Services (AAS) can be defined as "the entire set of organisations that support and facilitate people engaged in agricultural production to solve problems and to obtain information, skills and technologies to improve their livelihoods[2]".

[2] Birner, R., Davis, K., Pender, J., Nkonya, E., Anandajayasekeram, P., Ekboir, J., Mbabu, A., Spielman, D.J., Horna, D., Benin, S. and Cohen, M., 2009. From best practice to best fit: a framework for designing and analyzing pluralistic agricultural advisory services worldwide. *Journal of agricultural education and extension*, *15*(4), pp.341-355.

Section 1: Introduction

1.1 Introduction

The purpose of this research is to explore the current and future potential role of Agricultural Co-operatives (dairy and livestock) in the provision of agri-advice to Irish farmers. We also include other co-operatives which have a direct or indirect role in agri-advice.

1.2 The Relevance and Reach of Ireland's Agricultural Co-operative Sector

In Ireland, although processing (dairy) and sales (livestock) are the principal activities of agricultural co-operatives, they are also involved in a variety of other activities (for example, grain purchase and processing, farm input sales, auctioneering)[3]. An estimated 98 per cent of milk processing is carried out by Irish agricultural co-operatives, while the livestock marts manage 66 per cent of the throughput of live animals.[4] The sector has a combined membership of 87,433 (Dairy 71%; Livestock 29%) and combined employment numbers of over 40,000.[5]

This study considers the current and future potential role of Ireland's agricultural co-operatives in providing Agricultural Advisory Services (AAS) to farmer members. To evaluate this role, we must also consider how agriculture is changing and will change in response to policy, societal and environmental requirements.

1.3 The Changing Nature of Agriculture

In a European context, there is a concern that EU agriculture is becoming increasingly vulnerable across several dimensions, namely, environment, health, economic and social.[6] There is therefore an expectation that, to effectively address these vulnerabilities, current and future policy approaches to agricultural development must be different from the previous growth-driven policies. At EU level, key strategies including Farm to Fork and Biodiversity and Soil strategies (as part of Europe's Green Deal) and CAP 2023-2027, aim to address the unsustainable challenges within European food systems. The ambitions of these strategies will significantly influence the requirements of member states' future CAP strategic plans. In Ireland, at a national level, a repository of reports and public consultations that will influence the future direction of Ireland's agri-sector to 2030 and beyond to 2050 are circulating. Since the new CAP 2023-2027[7] hosts substantive environmental measures (mandatory and voluntary) to

[3] European agri-cooperatives (Cogeca), 2014. Development of Agricultural Co-operatives in the EU 2014.; Carroll et al., 2022

[4] European agri-cooperatives (Cogeca), 2014. Development of Agricultural Co-operatives in the EU 2014. http://cdn.nimbu.io/s/hcjwsxq/channelentries/kgzke9k/files/cogeca_report_2014_agricultural_cooperatives.pdf

[5] ICOS. Annual report 2020. http://icos.ie/news/annual-reports-accounts/

[6] Détang-Dessendre et al., 2018

[7] Department of Agriculture, Food and the Marine. Common Agricultural Policy (CAP) post 2020.

enhance the role of environmental services within the agri-policies and schemes of EU member states, farmers will play a central role in the delivery of these new EU strategies.[8]

To implement the required changes, a sustainable supply of farmers within European agriculture is needed. However, an ageing demographic has been highlighted as a significant risk.[9] As well as generational renewal, there is also a much-recognised need for a re-design of environmental programmes and schemes encompassing a greater collaborative, landscape and results-based focus. We now briefly discuss generational renewal and agri-environmental programme design below.

1.3.1 Generational Renewal Challenge in Farming

A shortage of young farmers participating in agriculture will constrain the capacity of European agriculture to sustain its productive capacity and, consequently, its competitiveness. A recent article by the European Council of Young Farmers and published by the European Court of Auditors (ECA)[10] points out that generational renewal within agriculture must be a priority if the future agri-environmental policy targets are to be met. In fact, the ECA argues that without young people in farming, 'the diversity and the strengths of EU food systems will be undermined'. The following quote from the article reinforces this point:

> "*Management of natural resources, landscape arrangements to prevent the effects of adverse climate events, carbon sequestration and other sustainable practices are essential levers of action when translated both into regulatory and market-based solutions. But they will require young farmers, women and men, to be implementable in the decades to come."*

In Ireland, CSO farm structure survey data (2016) shows a decrease by 2,100 (1.5%) in the number of family farms (predominant farm type in Ireland) since 2013, with more than 50% of farmers over the age of 55 and only 5% under the age of 35[11]. To implement transformative food system change, a sustainable supply of primary producers and farmers within European and national agricultural sectors is also needed. Therefore, if future policy targets for a climate smart, biodiverse and environmentally resilient EU agri-sector are to be pragmatically implemented and achieved, there is a need to address sociodemographic risks within the agricultural sector both in Ireland and Europe.

https://www.gov.ie/en/publication/76026-common-agricultural-policy-cap-post-2020/

8 European Commission, 2020. https://ec.europa.eu/commission/presscorner/detail/en/ip_20_884. Department of Agriculture Food and the Marine. Common Agricultural Policy (CAP) post 2020. https://www.gov.ie/en/publication/76026-common-agricultural-policy-cap-post-2020/

9 European Commission, 2021. https://ec.europa.eu/info/news/ageing-europes-farmers-remains-major-challenge-rural-areas-2021-apr-08_en

10 Lenzi, D 2021. https://medium.com/ecajournal/meeting-young-farmers-ambitions-a-condition-for-the-success-of-the-new-cap-e630d9358508

11 Cited by Larkin, 2020. Source https://thewaterforum.ie/app/uploads/2020/11/CAP-Reform-Report-to-An-Foram-Uisce_FINAL-3.pdf

1.3.2 Evolving Agri-Environmental Programme Design

Since the 1980s, agri-environment schemes (AES) have been a frequent feature of EU agricultural policy, namely REPS, ASOS and GLAS[12]. The new CAP 2023-2027 has directed a higher percentage of Pillar I payments towards environmental schemes. To strengthen the effectiveness of AES in future, there is increasing attention to and recognition for mobilisation of landscape, results-based and collective approaches. These are seen as possible pathways to reconciling what may be considered as competing social, environmental, and economic objectives for agriculture[13] and as reference points for future AES.

1.3.2.1 Landscape-Based Approaches

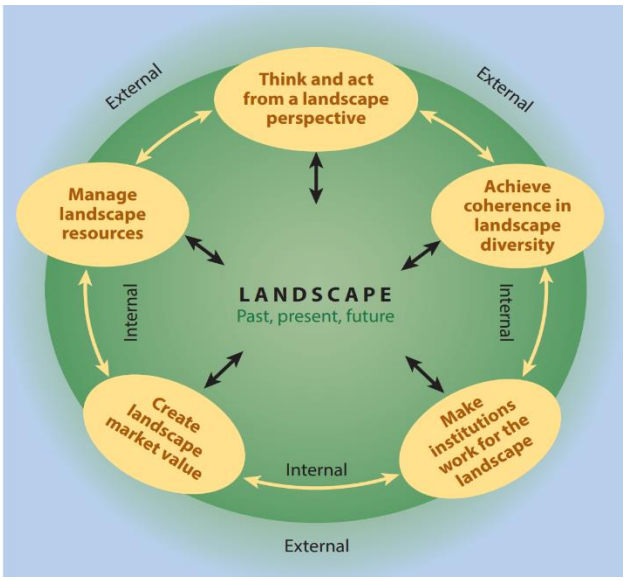
A renewed focus on landscape-based approaches to land management and environmental challenges has emerged in recent years[14] as sectoral or high-level approaches tend to have limited success.[15] Landscape within this context is generally geographically bound while conceptualised in various ways such as a political district, river basin, economic market, ecologically protected area or cultural heritage site.[16] A landscape-based approach can be defined as a "framework to integrate policy and practice for multiple land-uses, within a given area, to ensure equitable and sustainable use of land while strengthening measures to mitigate and adapt to climate change".[17] It integrates existing interventions and multi-stakeholders to simultaneously meet environmental and socio-economic challenges in a particular region.[18]

It is indicated that landscape-based approaches are attractive conceptually but challenging in practice.[19] Some key factors that hinder successful landscape-based practice are engagement from stakeholders, access to financial and data resources, and overall institutional governance.[20] A number of authors stress the importance of 'co-ordinating institutions'[21] and local institutional embeddedness[22] along with stakeholder and institutional capability[23] for a sustained and successful landscape-based approach. Co-operatives then which tend to be locally embedded, with access to farmers and wider community stakeholders and access to financial and data resources, should have the co-ordination capability necessary to contribute to successful and sustained landscape-based approaches.

[12] Mcgrurk et al., 2020; Cullen et al., 2021
[13] Davies et al., 2004; Brunell, 2012; OECD, 2013; Uetake 2015; Barnaud et al., 2018; Sayer et al., 2013
[14] Reed et al., 2015
[15] Arts et al., 2017
[16] McGonigle et al., 2020
[17] Reed et al., 2015:3
[18] Minang et al., 2015; Sayer et al, 2013
[19] Vermunt et al., 2020
[20] Vermunt et al., 2020; Sayer et al, 2013
[21] Vermunt et al., 2020
[22] Sayer et al., 2013
[23] Arts et al., 2017

This co-ordination value of co-operatives for landscape-bsed approaches is further highlighted by the Wageningen's Landscape Governance Capacity Framework where co-ordination is central to four out of the five steps outlined in the framework. Co-operatives have the ability to create coherence between a variety of stakeholders'; to 'work for the landscape'; to create 'landscape market value' and to manage 'resources through endogenous management systems'. The Wageningen framework is presented in greater detail in Figure 1 below.

Figure 1: Landscape Governance Capacity Framework (Wageningen Centre for Development Innovation)
Source: Arts et al (2017:455)



In addition to highlighting the role of co-ordination to the success of landscape-based approaches, emphasis is also put on the role of an "existing and functional" institutional framework.[24] Co-operatives, as embedded entities, are one such existing institution with co-ordination ability and access to both farmers and community stakeholders. However, while co-operatives tend to be embedded and landscape-based, a fact that enables them to play this co-ordination institutional role, they may be less proficient in 'thinking landscape' as advocated by the Wageningen model outlined above. A shift in orientation would seem to be required here in order for co-operatives to successfully meet the current socio-economic and environmental challenges facing agriculture. An area particularly calling for a landscape approach is water quality. We now briefly discuss Water Framework Directive Catchments.

[24] Reed et al., 2015

Water Framework Directive Catchments

The Water Framework Directive (WFD), in its intention and implementation, is very much based on a collaborative and landscape-based approach. The Directive, introduced in the EU in 2000, directs that all waters (rivers, lakes, groundwater and so on) are protected and that measures are set in place to restore such water bodies to 'good' status or good potential by 2027 at the latest (Draft River Basin Management Plan 2022-2027).

The Directive in Ireland is implemented through the River Basic Management Plan 2022-2027 (current plan). These plans, in line with the spirit of the Directive, very much call for an integrated (including farmers, industry, policy makers, community and so on) response to water quality protection and improvement.

Along with this participatory approach, the implementation of the Directive is based on small geographical areas, known as catchments. There are 46 designated catchment and 583 sub-catchments areas across the 26 southern counties of Ireland. These catchment areas incorporate 4,829 waterbodies. The catchment and sub-catchment areas are outlined in Figure 2 and Figure 3 below (www.catchments.ie).

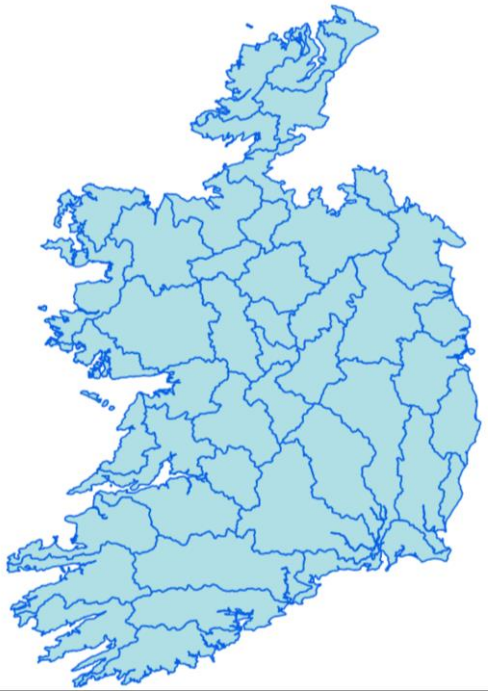


Figure 2 Catchment WFD areas

Figure 3 Sub-catchment WFD Areas

Source: www.epa.ie

This local catchment focus requires an integrated response from all the stakeholders within the geographical areas. However, it has been noted that the community structure for this integrated response

is lacking (O'Cinneide et al, 2020) and has contributed to disappointing water quality results.[25] The OECD (2015) stresses the importance of governance and institutional capacity to respond to the specificities, culture and history of each community. Co-operatives, as farmer-owned and embedded organisations, would seem to be key institutions here. One particular WFD initiative in which the dairy co-operatives have played an active role is the Agricultural Sustainability Support and Advisory Programme (ASSAP).

Agricultural Sustainability Support and Advisory Programme (ASSAP)

ASSAP is jointly funded by DAFM[26], DHLGH[27] and the dairy co-operatives. The programme has 29 agri-advisors (20 from Teagasc and 9 from the dairy co-operatives) and targets areas with water quality difficulties. It adopts an advice-led and co-operative, rather than regulatory, approach with the farmer. The Local Authority Waters Programme (LAWPRO) and its community officers are also active stakeholders in ASSAP, providing the scientific and community facilitation support. ASSAP is an interesting landscape, collaborative and targeted model which seems to be achieving water quality results.

Also aligned with the landscape-based approach, the EIP agri-projects, based on groups of farmers carrying out results-based environmental projects, have proven very successful in both Ireland and other EU countries.[28] These are discussed below under the results-based approach to environmental programmes.

1.3.2.2 Results-based Approaches

A notable design feature in future AESs will be a shift from action-based towards results-based agri-environment payment schemes (RBPS). Broadly, there is a consensus that the contributions of AES in addressing environmental and biodiversity issues have been disappointing to date.[29] Quantification of their measurable environmental benefits has been problematic, and concerns have also been raised regarding scheme participation rates. Participating farmers tend to be more extensive (cattle, sheep) while more intensive and profitable sectors (dairy) are underrepresented in these schemes.[30]

Since 2016, Ireland has made positive progress in utilising EIP-Agri approaches to address adverse environmental issues in the areas of biodiversity and water quality. The BRIDE (Biodiversity Regeneration in a Dairying Environment), an Agri-EIP which focuses on biodiversity in a conventional

[25] The EPA (2019) in their assessment of the implementation of the Water Framework Directive, indicate that almost half of Ireland's rivers and lakes are in an unhealthy state (47% and 50% respectively)
[26] Department of Agriculture, Food and Marine
[27] Department of Housing, Local Government and Heritage
[28] European Commission, 2020
[29] Mcgrurk et al., 2020; Cullen et al., 2021; Moran et al., 2021
[30] Mcgrurk et al., 2020; Cullen et al., 2021

dairying environment[31], is one example of this and of particular relevance to this study.[32.] There are also examples of emerging initiatives in co-op settings, such as the *Carbery Greener Dairy Farms™*, which has also achieved notable success.[33] Both Carbery and Teagasc provide agri-advice services in relation to the project to participating farmers. An interesting aspect of the EIP projects above is that they highlight approaches to environmental management that are not confined to marginal land or small scale but also incorporate conventional and intensive farmers. Co-operation is a key aspect of these results-based projects. We now look at co-operation in AES in greater detail.

1.3.2.3 Co-operation Approaches

Co-operation Scheme in new CAP 2023-2027

The new CAP 2023-2027 has both a landscape and co-operation dimension, particularly under the new agri-environmental and climate measure (AECM) which incorporates co-operation projects (CPs) across a number of regions. The expected uptake on these CPs is 20,000 Irish farmers. Eight regions in Ireland have been chosen for these CPs where groups of farmers can submit proposals for consideration. Farmers who are operating as part of these CPs can receive up to €10,500 per annum. The participating farmers will be supported by a local CP team who will assist in the implementation of the scheme at a local level. These CPs are intended to build on the EIP projects. Farmers who are not within the CP regions can still participate in AECM which is set to replace the Green, Low-Carbon Agri-Environmental Scheme (GLAS) in the next CAP. Payment under this scheme will be capped at €7,000 with an expected uptake of 30,000 farmers. There is scope for agricultural co-operatives (both dairy and livestock) to either enable a CP or enable EIP projects in their regions.[34] A way of facilitating co-operative involvement could be achieved by directing funding through the co-operatives for the development of such co-operation projects. There already appears to be moves towards this approach in Europe.

Co-operative Payment Model

In the Dutch agri-environment-climate measures are now delivered through a co-operative approach. Since 2016, individual applications are no longer accepted for funding purposes. The Dutch government moved from an individual to a co-operative approach for four reasons; firstly, reversing the decline in farmland biodiversity requires a cross-farm approach; secondly, "making co-operatives the final

[31] Byrne et al., 2020
[32] Byrne et al., 2020
[33] Byrne et al., 2020
[34] Department of Agriculture Food and the Marine. Food Vision 2030- A World Leader in Sustainable Food Systems, pg. 173. https://www.gov.ie/en/publication/c73a3-food-vision-2030-a-world-leader-in-sustainable-food-systems/#

beneficiaries of agri-environment support allows for a simpler scheme design with room for local fine-tuning"; thirdly, working with co-operatives reduces error and improves scheme compliance; and finally, it allowed the Dutch to build on their tradition of co-operatives where co-operatives have been a trusted partner of both government and farmers.[35]

The scheme works as follows: the government signs a contract with the regional co-operative which sets out the payments and determines the agri-environmental targets to be achieved on a results-based approach. The co-operative then concludes contracts with individual farmers. The Dutch government has been working in close contact with the EU Commission in the development of 'workable rules and regulations' around this approach.[36] Other countries, such as Germany, are interested in adopting the Dutch co-operative model to implement agri-environment-climate measures.[37] This may be a model worth exploring in an Irish context.

1.4 Agri Advice and how it has changed

In the context of agri-development, the role of agri-advisory services is very much reflexive and mirrors agricultural development requirements.[38] As new requirements for agricultural development come on stream, enhanced knowledge and innovation are needed; these in turn create new requirements and priorities for agri-advisory services. In Europe, for example, agricultural policy reforms since the 1990s have emphasised the environment resulting in each member state being obliged to establish farm advisory services to ensure compliance.[39] In 2015, the lifting of EU milk quotas created significant growth opportunities for dairy. In line with this, Ireland's dairy sector has significantly expanded its output. Key to this has been further investment in research to procure knowledge and advisory to disseminate the knowledge needed to develop Ireland's dairy sector. In the years since 2015, the dominant orientation of agri-advice has been to facilitate farmer decision making in improving farm production and livestock practices in order to expand production efficiently and effectively. Exploring potential new needs for agri-advice is timely in view of additional policy requirements. European farmers in the future are tasked with the dual demands of viably producing food while measurably enhancing the supply of environmental goods from agriculture. Procuring and supplying the knowledge and innovation needed to implement these ambitious and (somewhat/sometimes conflicting) agri-policy objectives and targets at farm level will inevitably create new needs for agri advice provision within agri-advisory service governance structures. Agri-advice is now generally delivered within a systems framework which is briefly discussed next.

[35] Terwan et al., 2016 on behalf of the Ministry of Economic Affairs
[36] Terwan et al., 2016
[37] Latacz-Lohmann et al., 2019
[38] Leeuwis, 2004, p.17
[39] Jovanić and Đelić, 2013

1.4.1. The Agricultural Knowledge and Innovation System (AKIS)

Over the decades, theoretical thinking around how knowledge and innovation in agriculture occur has evolved[40], moving from the top-down linear innovation model towards an innovation systems perspective.[41] Specifically, there has been a shift whereby decision makers and knowledge users (farmers) are not solely viewed as passive recipients of knowledge and innovations but as valued contributors. In the linear model, the main model of agricultural extension was to "extend" or transfer the products of research to agricultural communities.[42] Dominant criticisms of the linear model have focussed on its overly simplistic assumption that the source and solutions of problems lie in the first two stages only[43], with a disconnect between expertise (research and advice) and the socio-economic context of the decision maker (farmers).[44]

Adopting an information/innovation systems perspective places a strong emphasis on mutual learning between various actors and a collective contribution to knowledge and innovation. While the AKIS framework still acknowledges formal expertise, it also regards processes of knowledge exchange between agricultural stakeholders as imperative to sustain innovation capacity. Thus, its emphasis is on this *system* of knowledge exchange, its linkages and the feedback loops between knowledge actors, key being the user (farmer) decision maker[45]. As the AKIS concept gained traction, a multitude of participatory and group-based agri-advisory service strategies have emerged globally.[46] However, even within this framework, it is recognised that in AKIS the farmer still plays a relatively passive role.[47]

1.5 Ireland's Agri-Advisory System

In the context of this report, the emphasis is on the advisory dimension of the AKIS and, specifically, the agri-advisory services provided by the agricultural co-operative sector to members. Figure 4 illustrates the advisory sources within Ireland's AKIS[48] and the wide range of agricultural value chain actors (individuals and organisations) including knowledge users who contribute within the advisory dimension of the AKIS, essentially shaping the advisory culture of Irish agriculture.

[40] Klerkx et al., 2012, p. 457
[41] Klerkx et al., 2012, p. 457
[42] Rivera, 2011
[43] Leeuwis, 2004, p.134
[44] Faure et al., 2018
[45] Anderson, 2008; Faure et al., 2018; Labarthe et al., 2013
[46] Black, 2000
[47] Department of Agriculture Food and the Marine. Food Vision 2030- A World Leader in Sustainable Food Systems. https://www.gov.ie/en/publication/c73a3-food-vision-2030-a-world-leader-in-sustainable-food-systems/#
[48] Prager and Thomson, 2014

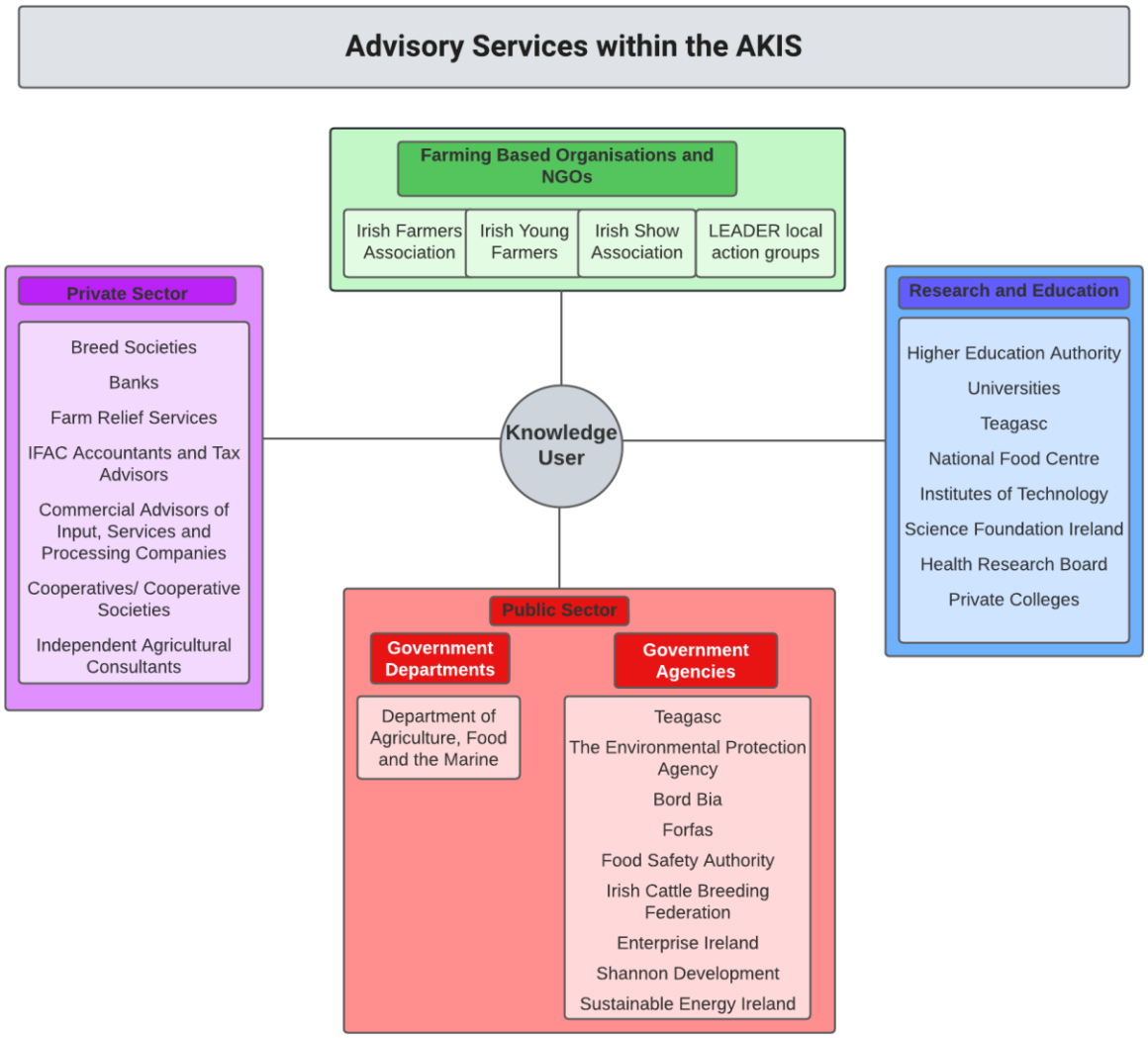


Figure 4: Advisory Services in European AKIS (PRO AKIS) Republic of Ireland. Source: Proakis country reports inventory of the AKIS and advisory services in the EU 27

Figure 4 identifies the variety of governance structures within Ireland's agri- advisory system. The main advisory actors are categorised as Public Sector, Private Sector, Research and Education, Farming based organisations (FBOs), and other non-governmental organisations.

Teagasc is Ireland's public agri-advisory organisation and is the national provider of advisory services.[49] Teagasc has 236 advisors regionally based across 55 locations.[50] CSO (2020) data states that, as of 2016, there were 137,500 farms in Ireland,[51] and 82% utilise advisory services. In addition to Teagasc, 169 independent private advisory organisations exist within Ireland's agricultural advisory

49 Teagasc, 2020. Support for Delivery. https://www.teagasc.ie/about/corporate-responsibility/state-grant-in-aid/support-for-delivery/
50 Teagasc, 2017. Annual Report. https://www.teagasc.ie/publications/2018/teagasc-annual-report-2017.php
51 CSO, 2020. Farms and Farmers. https://www.cso.ie/en/releasesandpublications/ep/p-syi/psyi2018/agri/farmsandfarmers/

system with circa 498 advisors across ACA and non-ACA networks.[52] Private AAS are a current and fast-growing feature of European AAS governance structures,[53] including Ireland,[54] where since the 1990s, their presence has grown.[55] From 1994, following the introduction of the Rural Environment Protection Scheme *REPS* (Ireland's first Agricultural Environmental scheme, *AES*)[56],- the private agri-advisory network began to emerge in Ireland and has since evolved to provide direct whole farm or technical advice, both competing with and complementing the services of the public model.[57]

Although farmers now use a variety of sources to obtain knowledge, agri-advisory services continue to rank as an important information source. In Ireland, 82% of farmers engage with agri-advice services. A 2015 EU study found that interviewed farmers identified other farmers as a key information source, followed by farmers' associations and agricultural consultants and advisors.[58]

1.6 Role of Co-operatives in AKIS

Notable within Ireland's AKIS is that co-operatives are categorised as a private actor rather than as farmer-based organisations. Another study that discusses the features of national AKIS' in select EU member states also categorised Irish co-operatives within the private sector, stating that:

> "*In Ireland, for example, cooperatives would intuitively be classified as farmer-based organisations, but due to their commercial nature they are mostly private sector organisations'.*[59]

Although economic activities are a core feature of the activity of co-operatives, creating a commercial/private dimension, the values upon which co-operative business models are based suggest a distinctive economic identity that differentiates co-operatives from other private sector actors within the AKIS. For example, member economic participation and education and training of members are unique principles of the co-operative model. Hence, an agri-advice function is central to the purpose of agricultural co-operatives. The academic and institutional literature discussing Ireland's AKIS and their/its contributions to the advisory system does not appear to take these characteristics of the co-operative structure into account.

[52] Prager and Thomson, 2014
[53] Knierim et al., 2017),
[54] Dunne, 2019
[55] Dunne, 2019
[56] Mcgurk et al., 2020
[57] Prager and Thomson, 2014
[58] European Commission (2016). *Needs of young farmers: report I of the pilot project : exchange programmes for young farmers, final*. **https://data.europa.eu/doi/10.2762/13075**
[59] Knierim et al., 2015

It has been suggested that agricultural co-operatives in Ireland do not have a strong presence in the delivery of agri-advisory services[60]:

> *"Although Ireland has one of the most developed cooperative sectors in Europe it does not play an important role in the distribution of advisory services''.*

In a recent report on the contemporary agri-advice sector in Ireland, co-operatives are not mentioned and are implicitly grouped in with other private advisors.[61] In an historical analysis of agri-advice in Ireland, co-operatives are only tangentially mentioned.[62]

Co-operatives, as collaborative, landscape-based organisations with long-standing advisory functions, would seem to be well-placed to meet the environmental, economic and societal challenges facing farming and to deliver on the new agri-environmental and climate measures (AECM) in CAP 2023-2027. They have the ability to map and gather data on a regional level to enable landscape approach projects. Their co-operative governance structure enables the collective implementation of such projects. No other Irish agri-advisory body has these advantages. In addition, agri-advice is not something new in co-operatives; it has existed since their founding years and is captured well in Horace Plunkett's[63] mantra "better farming, better business, better living". However, as pointed out earlier, although the focus is increasingly on the role of co-operation in policy and political narrative, the real and tangible co-operative infrastructure on the ground seems to be missing from much of the narrative. Hence, this study will explore the type and nature of agri-advice that is currently taking place in agricultural co-operatives and investigate to what extent this could be further leveraged for the benefit of Irish farming, rural economies and the environment.

1.7 Study Objectives & Methodology

The main objective of the study was to firstly examine the role Irish agricultural co-operatives play in providing agri-advisory services to farmer members. A second objective was to broadly explore how factors influencing European agricultural development policies are creating enhanced/additional knowledge requirements for agriculture and how this may influence agri-advice and the potential role of the co-operatives. In line with the second objective, the study gives added significance to discussing

[60] Đurić et al., 2019

[61] Power, 2019. https://aca.ie/wp-content/uploads/2019/10/5870-ACA-J.Power-Economist-Report-Print-8.10.19.pdf

[62] Mícheál Ó Fathartaigh, Developing Rural Ireland: A History of the Irish Agricultural Advisory Services, 2021

[63] One of the founders of the Irish Agricultural Co-operative Movement.

how forthcoming environmental priorities and emerging farmer needs may influence agri-advice in the future. The research questions for the study were as follows:

1. What is the nature and extent of agri-advice services offered in agricultural co-operatives?
2. What are the delivery and support structures for agri-advisory in agricultural co-operatives?
3. What is the potential for enhancing the agri-advisory service in agricultural co-operatives?

As indicated earlier, the research focused on both dairy and livestock co-operatives. The methodology used for this study was approved by the University College Cork Social Research Ethics Committee. The research involved both surveys and one-to-one interviews with a wide range of stakeholders.

For the dairy co-operatives, an online survey was sent to each of the co-operatives. In the larger co-operatives, the survey was sent to the agri-advice team and in the smaller co-operatives to the CEO. The survey was administered through Qualtrics.[64] Surveys were sent to 21 dairy co-operatives, with a response rate of over 50% (14 responses). The survey was designed to answer the three research questions (see Appendix 1 for a copy of the dairy co-operative survey). SPSS[65] was used to analyse the data.

To supplement the dairy co-operative survey, particularly for the last research question, interviews with key witnesses within and close to the sector were carried out. Farmers who were experimenting with environmental and biodiversity measures on their farms were also interviewed. The interviews with key witnesses and farmers were carried out over Teams and by phone. A survey with young farmers was also carried out to capture their perspective on agri-advice, in terms of their current use and future needs. This was distributed by UCC Macra na Feirme and to the BSc Agricultural Science students in UCC (who are primarily dairy farmers). We received 24 responses from young farmers active in dairy. Either they or their families were members of dairy co-operatives.

For the livestock co-operatives, an online survey was sent to each of the co-operatives. The survey was sent to the manager of each of the co-operatives and was administered through Qualtrics. Surveys were sent to 28 livestock marts with a response rate of 39%. The survey was designed to answer the three research questions (see Appendix 2 for a copy of the livestock co-operative survey). To supplement the livestock survey, particularly for the last research question, a mart manager, a farmer and a key witness close to the sector for many years were also interviewed.

A number of key witnesses from other co-operatives which have a direct or indirect role in agri-advice were also interviewed.

[64] Survey Platform
[65] Statistical Package for the Social Sciences

1.8 Conclusion

This section outline the background context and conceptual framework for the study. The next section, section two, presents the findings on agri-advice in the dairy co-operative sector, followed by the findings from the livestock sector in section three. Sections 4 explores other co-operatives operating either directly or indirectly in an agri-advisory space. The final section 5 outlines the key conclusions and recommendations.

Section 2: Dairy Co-operatives: Results and Discussion

2.1 Introduction

This section presents the findings from two surveys, one with dairy co-operatives and the other with young dairy farmers. The findings also draw on interviews with key witnesses within and close to the sector. The section outlines the agri-advice services offered in the dairy co-operatives, the delivery of these services and potential opportunities for development. Before presenting the results of the survey, we present a geographic spread of Dairy Co-operatives in Ireland (Figure 5).

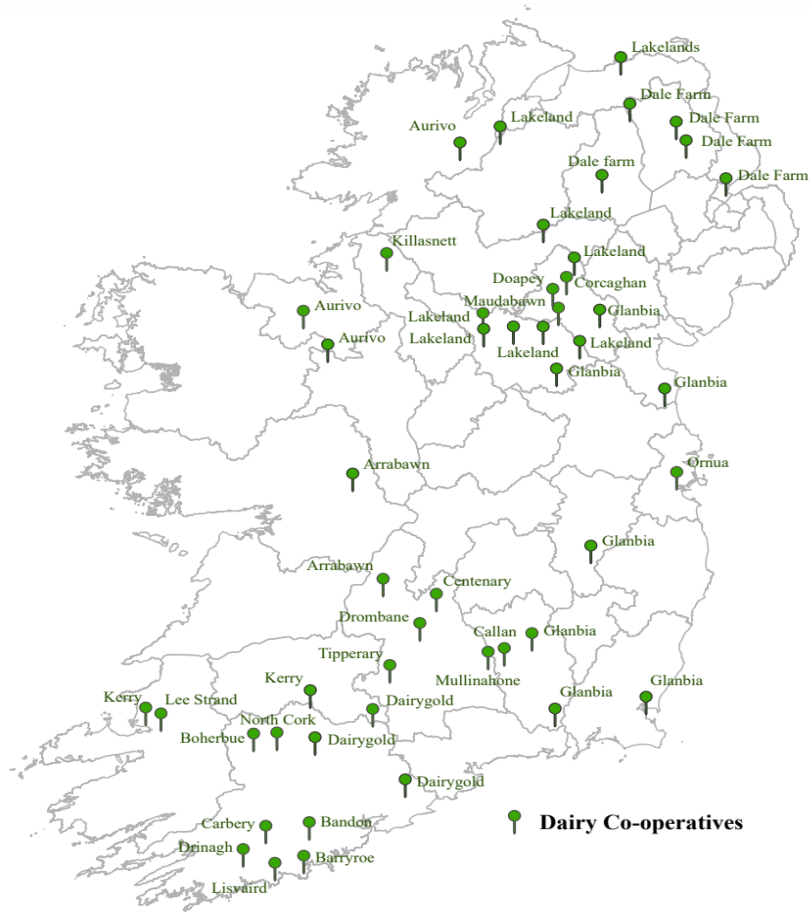


Figure 5: Geographical Spread of Dairy Co-operatives in Ireland
Source: Map produced by Tim Bohan and Noreen Byrne, UCC.

2.2 Dairy Co-operatives: Agri-Advice Services Offered

The dairy co-operative survey presented a list of eighteen potential agri-advisory service areas., Participants were asked to indicate which of the services their co-operatives offered. The results are presented in Figure 6 below.

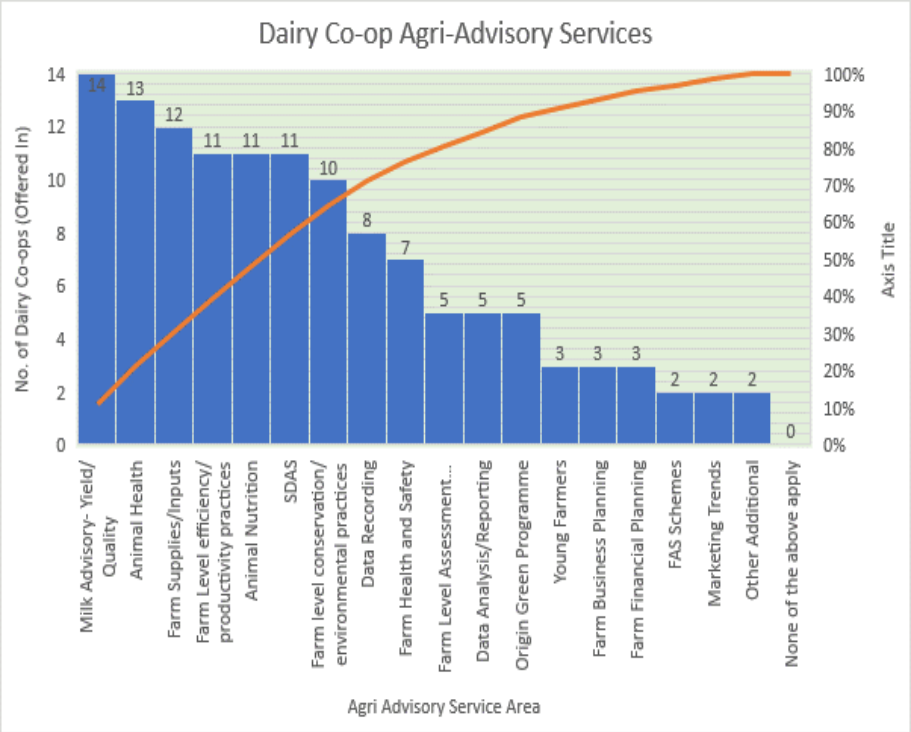


Figure 6: Dairy Co-ops: Agri-Advisory Services

The survey data in Figure 6 shows that dairy co-ops provide a broad range of services to assist farmer members across several areas. The most active agri-advice services areas are milk advisory, animal health/nutrition, farm supplies/inputs, farm level efficiency/productivity and conservation/environmental practices. The less active agri-advice service areas are farm business/financial planning, FAS/Scheme advisory and services with a targeted focus on younger farmers.

For further analysis, this list of agri-advice services was grouped into three categories and labelled as *sales*, *regulatory* and *farm development* type services. The services under each of these three categories are presented in Figure 7 below.[66]

[66] We did not include the main advisory service of the co-operatives - milk advisory - as it is offered by all of the co-operatives and is an overarching service.

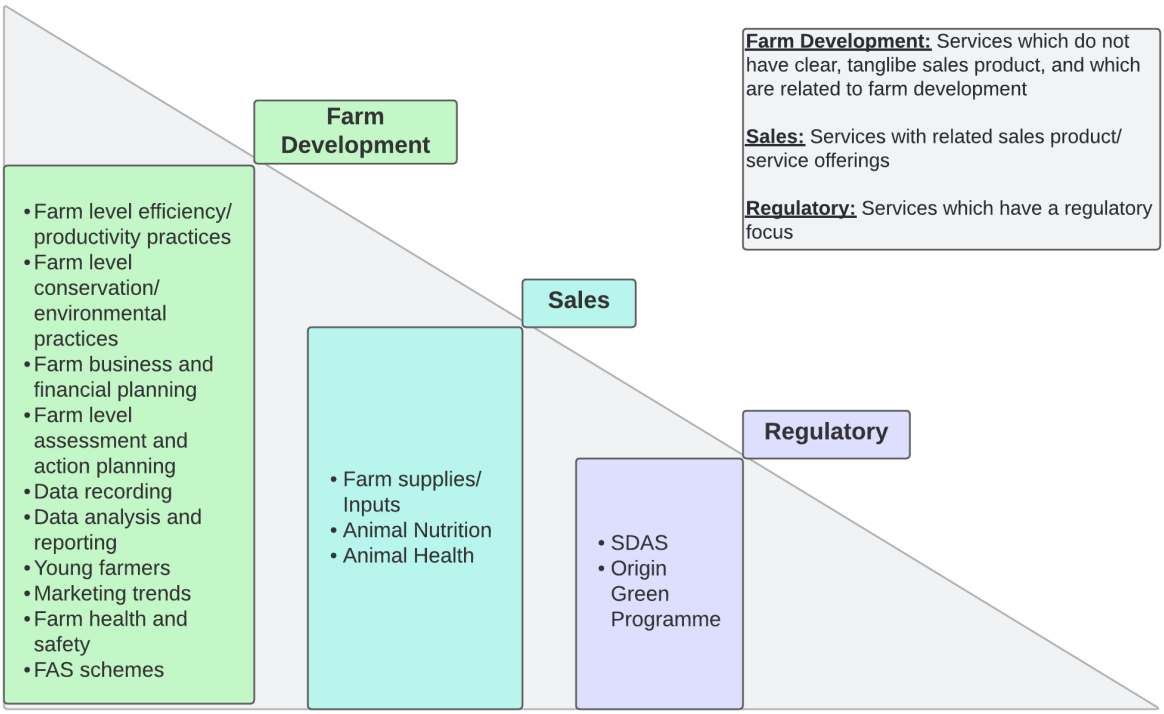


Figure 7: Dairy Co-ops: Dimensions of Agri-Advisory Services

The study recognises that, whilst dimensions may be interrelated and leverage off each other, it is useful to think about each service relative to its core objective. For example, typically services with a sales component emphasise the features of a product or service and advice is given in the context of the product or service the buyer is receiving. On the other hand, advice linked to farm development services is more likely to be contextualised/tailored to the circumstances of the farmer and the needs of their enterprise, suggesting a more adaptable approach and interactive relationship over a lengthier period. Such services are more likely to be co-created with the farmer, where the service emerges out of the farmer context and hence is more tailored to the development needs of the farm.[67] Therefore, services with a farm development dimension have the potential to offer high shared value to members. O'Mahony (2014) highlights that farm development or encouraging the farm to be 'the best it can be' should be one of the core purposes of the co-operative. He recommends that every co-op or regional area should have a "*farm development manager to manage supplier relations and farm development*" (O'Mahony, 2014:32). In the current challenging times, where farm development needs to balance environmental, economic, social and cultural dimensions, such a service needs to consider complexity and be context specific; growth or de-growth is not sufficient in itself as a strategy. We explore the three dimensions, *sales*, *regulatory* and *farm development*, in each of the co-operatives and determine which dimension is the most dominant in each of the dairy co-operatives. This is presented in Figure 8 below.

[67] Hockert & Ljung, 2009

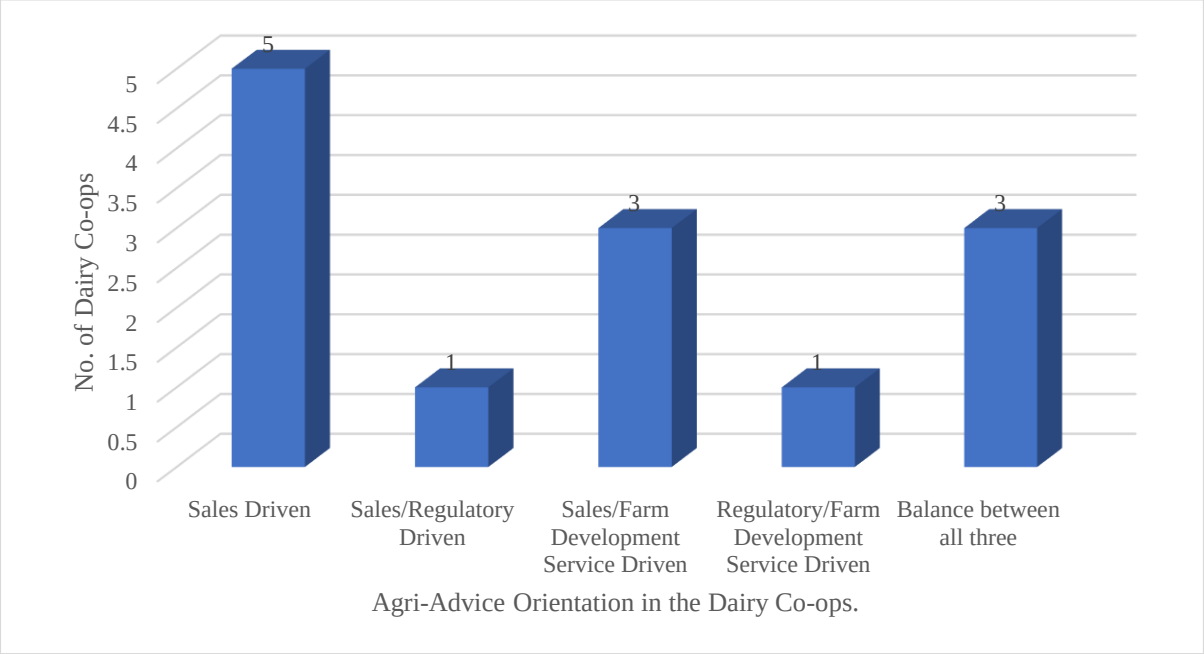


Figure 8: Dairy Co-ops: Dominant Orientation of Agri-Advice Services

Note: Figure 8 only includes 13 of the co-operatives as 1 of the co-operatives did not supply sufficient data for this question.

As can be seen from Figure 8 above, the agri-advice services in five of the co-operatives are primarily sales dominant, in that their primary focus is that of sales of feeds and inputs. Four of the co-operatives combine their sales focus with an equal focus on regulatory or farm development service offerings. One co-operative had a regulatory and farm development service orientation with a limited focus on sales. Three of the co-operatives have a balance between all three advisory dimensions (*sales*, *regulatory* and *farm development*). Hence, it could be said that seven of the co-operatives have a focus on farm development services. These co-operatives tend to be the larger co-operatives or co-operatives that are part of the federated West Cork co-operatives.

Agri-advisory services with a dominant sales focus may limit the development of a broader agri-advisory service offering, where new services are viewed only in terms of their ability to generate more immediate income. The perception of an over-emphasis on agri-advice with a sales/commercial dimension may also weaken the relationship (level of member commitment) between the farmer and the co-operative. This was highlighted to us in the following quote from a farmer who was interviewed for this study:

> "*The co-op always seems to be selling. During the fodder crisis, the co-op came down and did a public talk. First it was selling grain to the farmers to supplement, then if you did not have the money to buy, it was offering credit, but at all times it was selling."*

Whilst it may be argued that the selling of products via the co-op creates shared value (as members can avail of a more cost-efficient service), this 'always selling' perception may have the unintended consequence of creating a disconnect between the co-op and members and may, inadvertently, undermine trust and ultimately the relationship between the farmer and the co-op. It is some distance away from the principle of independent advice from the co-operative. Another key witness from the dairy co-operatives highlighted the conflict between sales (e.g., sales of farm inputs such as fertilizers) and the need for farmers to reduce such inputs. This conflict of interest could act as a barrier to defining farm environmental services in a substantive way for farmer members. This trade-off between the sales and environmental services is likely to become increasingly relevant in the context of enhanced environmental requirements. However, this doesn't appear to be a straightforward endeavour. One of the key witnesses from the dairy co-operatives indicated that,

'*Nobody wants to pay for the farm development or regulatory type services'*.

This results in difficulty in developing these types of services. Hence, a more balanced approach would seem to lend itself best to shaping a future oriented agri-advice service in the co-operatives. Balancing sales with farm development and regulatory services may allow the co-operative to supplement these other services. In addition, and more importantly, it may encourage the co-operative to develop an agri-advice services model with farmer needs around farm development at its centre. The best approach is possibly an integrated one, where the co-operative promotes all three aspects but has the environmental as core to the business model of the farm. A good example of this in one of the co-operatives was highlighted by one of the key witness interviewees. This is presented in Box 1 below.

A key witness interview with one of the dairy co-operatives highlighted this innovative environmental reward bonus system for farmers. This sustainability bonus is an innovative programme of action with inbuilt incentives that is supporting members to modify their on-farm practices in a sustainable manner. The example given was the development of a milk recording and herd health initiative by the co-op. A reward structure has been established within the programme to support the initiative through the payment of a milk sustainability bonus which enables members to increase their payments received from the co-op by using the services provided.

Box 1: Sustainability reward system for the farmer

In addition, farm development advice which focuses on profit rather than yield per hectare, creates a different orientation and one where a new agri-advice business that is less dependent on sales may emerge.

2.3 Dairy Co-ops: Delivery and Support Structure of Agri-Advice Services.

We explore how agri-advice delivery is structured within the co-ops, that is, in house (staff, use of technology and discussion groups/farm walks) and also to what extent agri-advice services are delivered in collaboration/partnership with external stakeholders. We also explore the environmental agri-advice support structure in the dairy co-operatives in terms of skills and services offered. However, first we look at overall in-house agri-advice structures.

2.3.1 In-House Structures

We explore in-house structures in terms of the number of staff working on agri-advice, and also the use of technology and discussion groups.

2.3.1.1 Agri-Advice Team

The dairy co-operative survey found that 71% of responses stated there was an in-house farm services advisory team. Of this, six had five or more agri-advisors, with the larger co-ops having the greater number of personnel assigned to agri-advice. When this variable is cross-tabulated with *agri-advice orientation*, there seems to be no relationship between number of personnel and orientation.

2.3.1.2 Use of Technology to Aid Delivery or Support of Agri-Advice

The use of technology to aid the delivery of agri-advice seems to be a relatively new concept in the dairy co-operatives. Hence, to explore this further we draw on some key witness interviews. One is a key witness from a dairy co-operative and the other is a consultant advising the sector.

Key Witness from Dairy Co-operative

The key witness from the dairy co-operative outlines how, through the introduction of a Customer Relationship Management (CRM) technology solution, the co-op has strengthened its advisory model capabilities and engagement with its farmer members in advice provision and how it manages member data, thus improving the efficiency and effectiveness of service delivery to members. The technology facilitates the automated capture of data related to interactions with members (replacing traditional paper-based methods). The data can be analysed to provide contextualised insights on how members are using services and on their needs. This assists with improving alignment between advice provision and members' needs and thus augments the service relationship. As the technology becomes embedded, potential opportunities for future service design are likely to emerge. While the technology is not a replacement for advice, its use as a tactile and strategic tool improves management of member data and provides insights into members' use of current services and into emerging or latent needs of the membership base. The data gathered and analysis of trends emerging over time can be used to inform future service design informed by members' needs.

Key Witness from Consultant Advisor to Dairy Co-operative Sector

This key witness pointed out that all key actors, including farmers and advisors across the AKIS, need to be upskilled in the area of digital technology. Farm advisors, in particular, should be highly digitally literate in order to support the transition to digital and act as proponents of digital. Farmers could be segmented based on age, size of farm or enterprise. Farmers can play a vital role in promoting digital and could act as digital coaches to other farmers/ their peers. The key witness also highlighted the need for simplification of the array of apps and services available to the agricultural community. The concept of a trusted library of apps was proposed during the discussion. The group agreed that a lot of awareness building was needed across the AKIS and one way to address this was to establish a Digital Showcase Farm that would demonstrate the latest technologies in place and could potentially act as a test bed. Data would also enhance environmental and conservation management at a landscape-scale, as opposed to at the farm level.

2.3.1.3 Use of Peer to Peer Mechanisms for the Delivery of Agri-Advice

We explored three peer-to-peer mechanisms, namely farm walks, farm demonstrations and discussion groups. The results are presented in Figure 9 below.

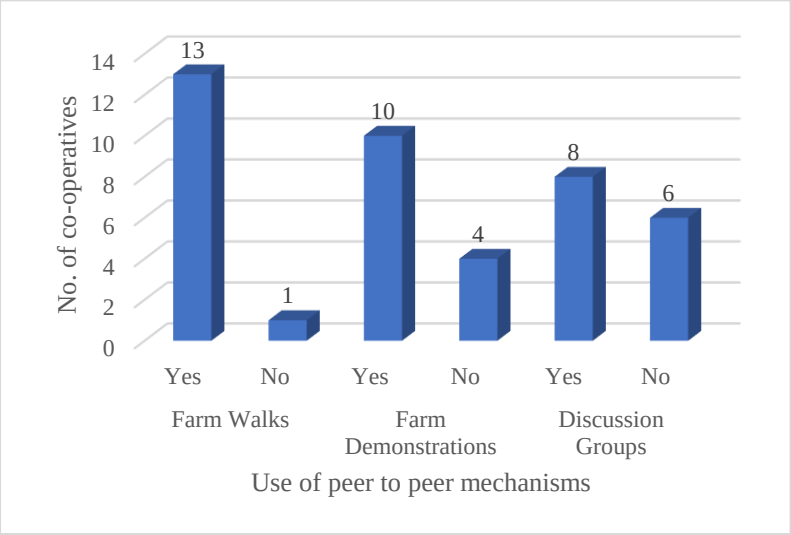


Figure 9: Use of peer to peer mechanisms of agri-advice delivery in the surveyed dairy co-operatives

As can be seen from Figure 9 above, almost all of the dairy co-operatives use farm walks, while 10 out of 14 use farm demonstrations. Discussion groups are less popular, with 8 out of the 14 using this mechanism of peer to peer learning. It is also interesting to note that the more sales driven co-operatives are more likely to use discussion groups. Hence, one would have to question if the discussion group is used more as part of the sales rather than the agri-advice agenda.

2.3.2 External Collaborations

Additional and improved collaboration is frequently emphasised as a crucial strategy to maintain the agricultural sector economically, socially and environmentally.[68] This is further supported by an EIP-Agri seminar ''Moving Innovation in Agriculture Ahead'' where it was stated that,

> "*Synergy and cooperation between the different parts of AKIS (governed by different incentives) is needed to close gaps between disciplines, sectors, institutes and organisations".*[69]

Regarding external collaboration, the dairy co-operative survey found that half of the co-ops have *significant collaborations* while the other half have some but far fewer. The collaborations identified within the survey response data tend to be predominantly with Teagasc and Bord Bia, followed by Dairy Sustainability Ireland, then with colleges/universities, Local Authorities, the Environmental Protection Agency (EPA), private advisors and other private enterprises. We also explored the extent of collaborations with the agri-advice orientation in the co-operative. This is presented in Figure 10 below.

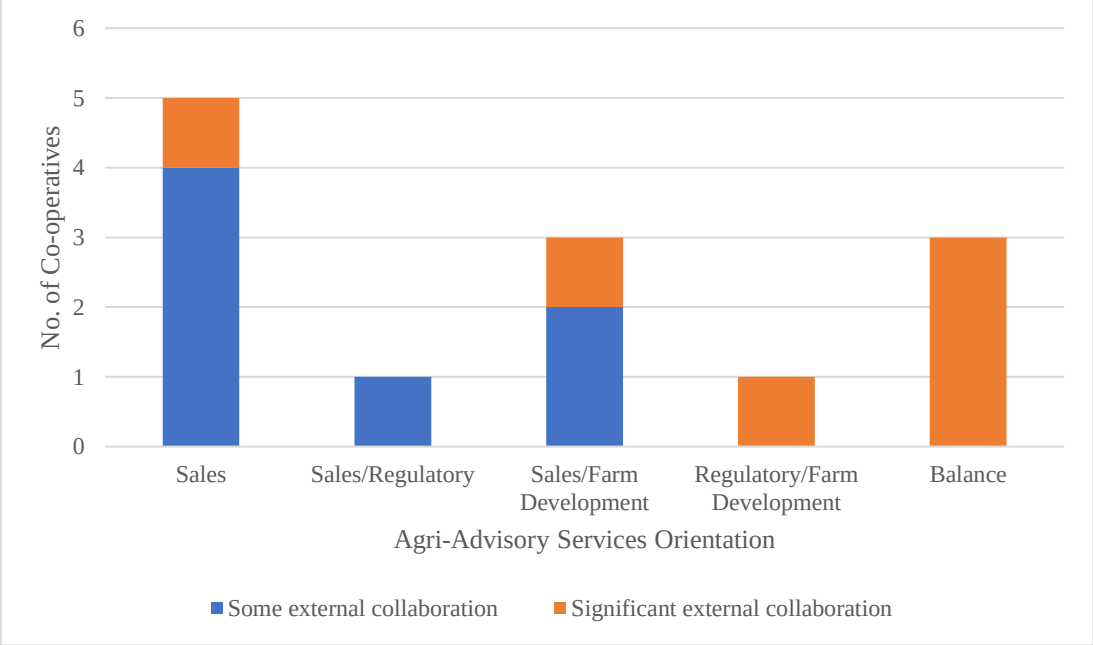


Figure 10: Crosstabulation between level of external collaboration and agri-services orientation in the co-operatives

[68] Velten et al., 2021

[69] EIP-AGRI Seminar 'Promoting creativity and learning through agricultural knowledge systems and interactive innovation' 3-4 December 2015 Dublin, Ireland https://ec.europa.eu/eip/agriculture/sites/default/files/field_event_attachments/sem-knowledge-20151203-pres02-inge_van_oost.pdf

As can be seen from Figure 10 above, those co-operatives with a regulatory/farm development or balanced orientation are more likely to have more external collaborations. Farm development is multi-disciplinary and calls on the expertise of many organisations working in collaboration with each other. The Agricultural Sustainability Support Advisory Programme (ASSAP) - joint water quality programme between the co-operatives, Teagasc and Local Authority – is a good example of this type of collaboration. The new *Signpost* programme is another example of collaboration which includes the dairy co-operatives. Both of these programmes are discussed in greater detail later in this section.

2.3.3 Dairy Co-ops: Environmental Agri-Advisory Infrastructure

In this sub-section, we explore both environmental skills and services offered in the dairy co-operatives.

2.3.3.1 Environmental Skills

To explore the level of overall environmental skills in the co-operatives, we grouped the following stated areas: soil fertility, emissions, water quality, waste management, biodiversity and ASSAP into one variable "*environmental skills"*. This is presented in Figure 11 below.

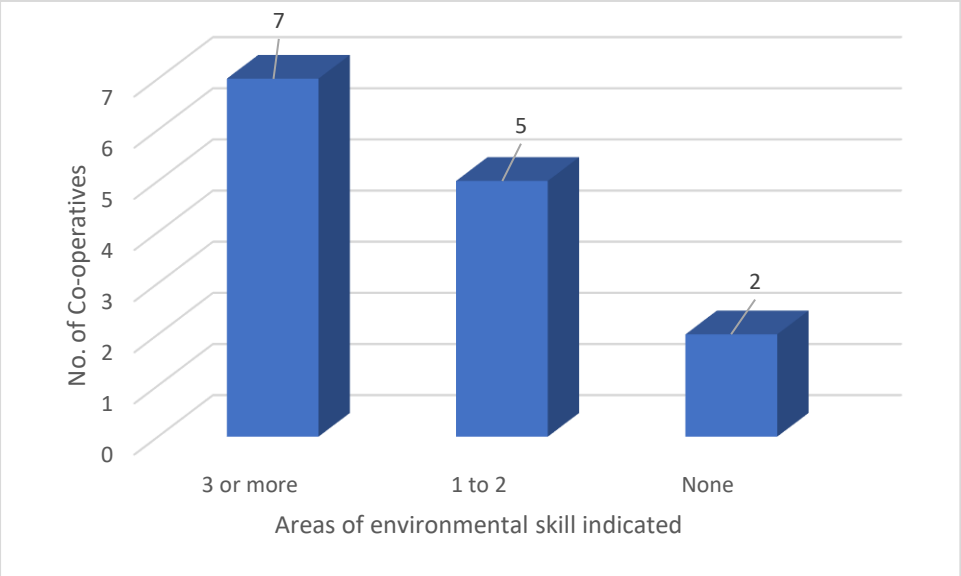


Figure 11: Profile of Environmental Skills

As can be seen from Figure 11 above, 7 of the co-operatives have stated 3 or more areas of environmental skills with only 2 stating none. While this is unlikely to reflect the entire co-operative, the focus of this survey is within the agri-advice group within the co-operative. Hence, as the agri-advice group interacts directly with members and the AAS is a key information source for farmers, increasing the environmental skills here would seem to be important.

The survey data indicates that soil fertility and water quality/ASSAP related skills are the most widespread across the surveyed co-operatives and biodiversity skill is the weakest. As the Dairy Co-

operatives are regionally located dealing with clustered farms, they have a particular potential/opportunity to advance biodiversity knowledge within the dairy farming sector.

The view of an agri-advisor interviewed as part of this study is that there has been a "*dilution of knowledge and skills within Ireland's agri-advisory system in environmental and conservation management*". The advisor indicated that, if left unaddressed, this is likely to be a constraining factor on the sector's capacity to procure and disseminate the knowledge to train and advise farmers in implementing more expansive environmental requirements. It is interesting to note that the Co-operation Projects (CPs) Teams within AECM under the new CAP will be strongly supported by ecologists.

We also explored the crosstabulation between environmental skills and agri-services orientation in the co-operatives. This is presented in Figure 12 below.

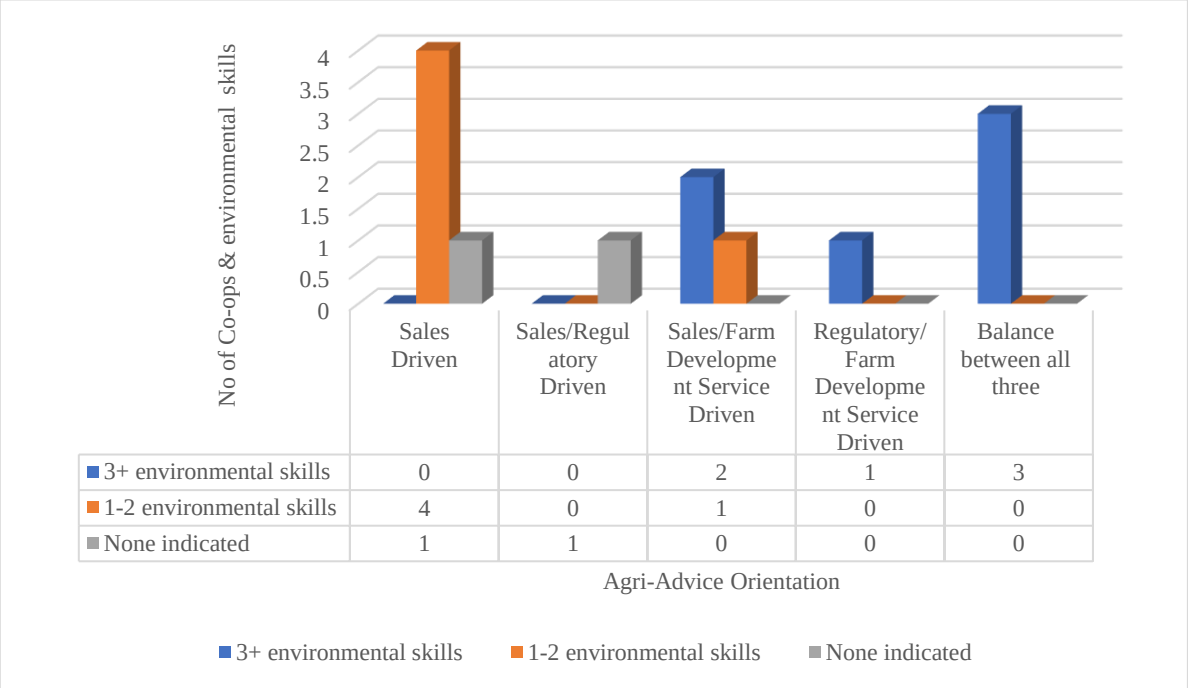


Figure 12: Crosstabulation between environmental skills and agri-services orientation in the co-operatives

As can be seen from Figure 12 above, co-operatives that do not have a primary focus on sales are more likely to have indicated 3 or more environmental skills. This highlights the benefit of operating beyond the sales focus.

We were also interested in exploring whether external collaborations enable environmental skills within the agri-advice group (applying the *same environmental skills grouping*). This is presented in Figure 13 below.

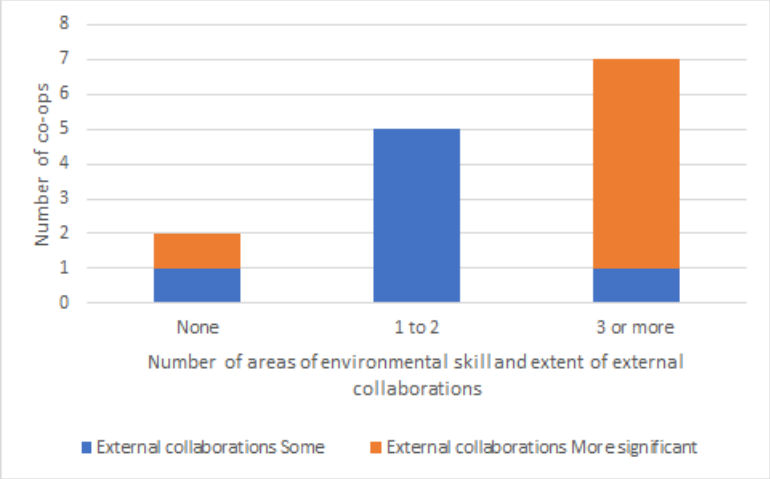


Figure 13: Number of areas of environmental skills and extent of external collaborations

As can be seen from Figure 13, co-ops with significant external collaborations are more likely to indicate higher levels of environmental skill (3 or more). This would seem to indicate the benefit of external collaborations in the development of environmental skills in dairy co-operatives.

In addition to environmental skills, we also explored the extent to which environmental services are offered by dairy co-ops. This is discussed next.

2.3.3.2 Environmental Services

The dairy sector is coming under increasing pressure to respond to the environmental challenges arising from milk production. This is likely to intensify and will necessitate enhancement of existing agricultural advisory knowledge structures which deliver environmental services. Considering this context, the survey sought to understand the extent to which environmental services relating to farm level environmental/conservation practices were offered by dairy co-ops to farmer members. This is presented in Figure 14 below.

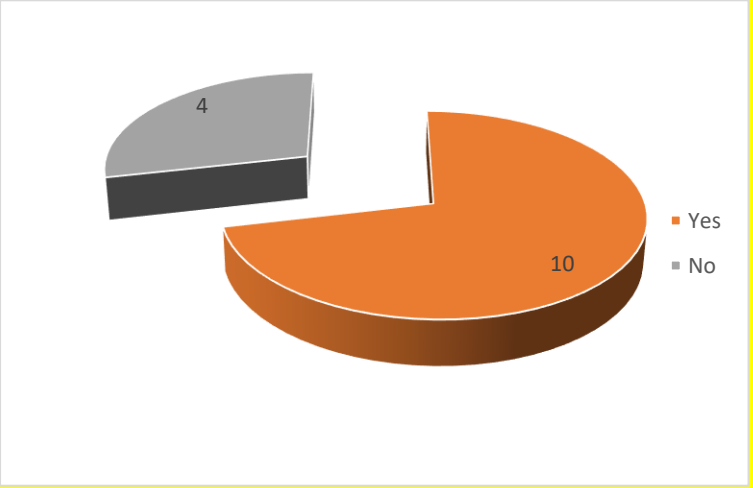


Figure 14: Farm level/conservation agri-advice services in the dairy co-operatives

As Figure 14 shows, 71% of co-ops responded as offering services in this space. Services such as soil testing and The Agricultural Sustainability Support and Advisory Programme (ASSAP)[70] were specified by several co-ops as examples of environmental services farmers can engage with via their co-op for advice.[71] We also explore environmental services/conservation services with agri-services orientation. This is presented as a cross-tabulation in Figure 15 below.

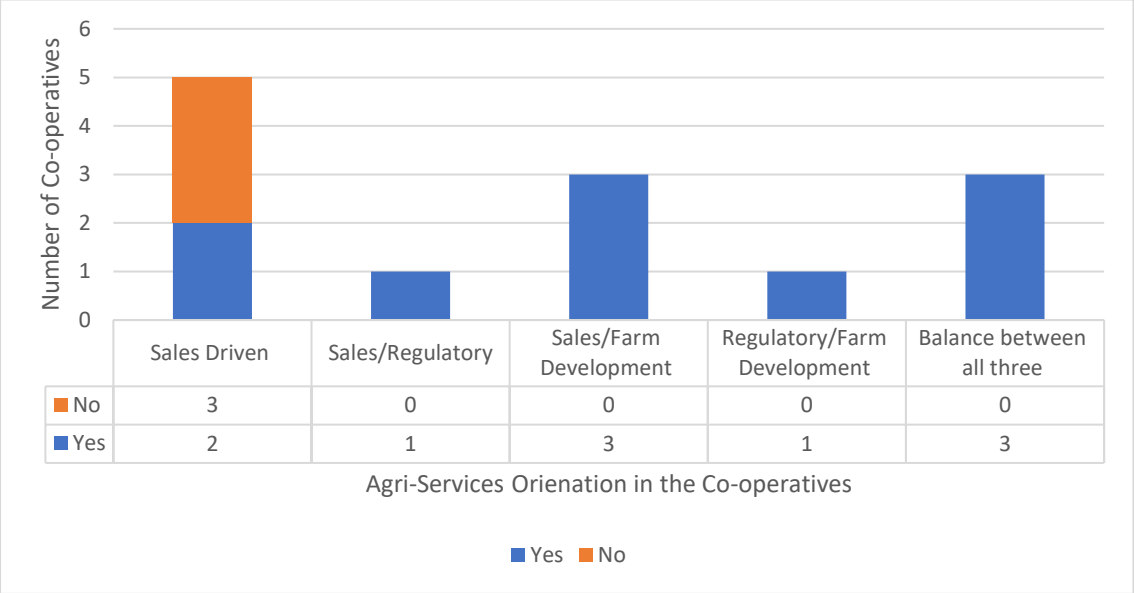


Figure 15: Crosstabulation between co-operatives offering 'farm level environmental/conservation services' and agri-services orientation in the co-operatives

As can be seen from Figure 15 above, the co-operatives with a sales driven agri-advice service are less likely to offer environmental services than those with a more mixed agri-advice orientation.

2.4 Potential Areas of Agri-Advice for Development in Dairy Co-operatives

We explore this potential from the perspective of dairy co-operatives, younger dairy farmers and intensive dairy farmers who are experimenting with environmental and biodiversity measures on their farms.

2.4.1 Perspective of Dairy Co-ops

The survey asked respondents to indicate the areas on which farmer members seek advice via the co-op. This is presented in Figure 16 below.

[70] ASSAP A collaborative initiative between government and industry. ASSAP is jointly funded by DAFM, DHLGH and the dairy industry. Its advisory services are provided jointly by Teagasc and the Dairy Processing Co-ops (https://lawaters.ie/agricultural-sustainability-support-and-advisory-programme-assap/

[71] In the rollout of the ASSAP programme, the Teagasc and Co-op advisors prepare a plan of action for each farmer identifying the key actions that farmer should take to reduce risks and pressures for water quality.

Figure 16: What are some of the key issues/questions farmer members seek advice on via their Co-op to assist them in their decision making?

Milk quality is a key area on which farmers seek advice but other farm development and environmental areas are also stressed. This highlights the scope that exists for development beyond farm inputs, for example, soil analysis, water quality and carbon footprint which are among other areas suggested. As discussed in section 2.2, co-ops with a dominant sales orientation may find it difficult to enhance their environmental services offering to members in line with future indications. Financial planning/business development is also stressed. Hence, the co-operatives are aware of the need to develop or enhance their offering in these areas suggesting that there is clearly scope for development beyond 'farm input' sales.

2.4.2 Perspective of Younger Farmers

A survey was carried out with young farmers (See Appendix 3 for a copy of the survey). We received 25 responses, primarily from dairy farmers. The farmers ranged in age from 19 to 25 and approximately 1/3 were female. In this survey, we asked younger farmers to indicate the areas of agri-advice that they are most interested in for the current and future development of their farms. For ease of presentation, we grouped the services into the following categories (environmental, farm planning/profit, animal welfare/nutrition and feed/inputs). The results are presented in Figure 17 below.

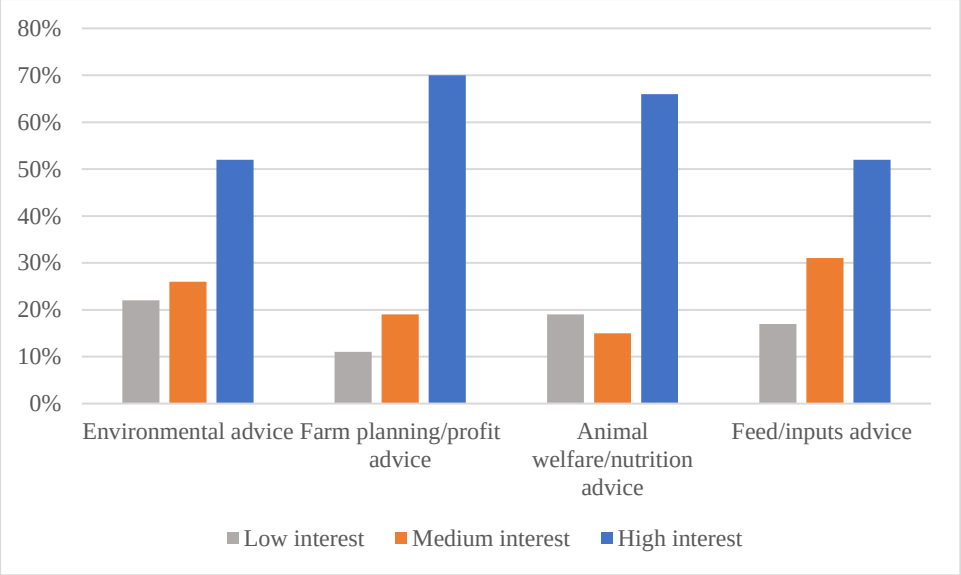


Figure 17: Level of interest in various categories of agri-advice from younger farmers (n = 24)

There is interest across all the categories, but particularly in farm planning/profit advice. For this reason, for a co-operative developing farm development services, perhaps it is key that farm profitability, environmental and animal welfare services are not developed separately but are in fact intrinsically linked to each other. In this way, environmental and animal breeding/welfare actions are directly contributing to profitability. This is the approach taken in regenerative agriculture[72] where the focus is on profit rather than yield per hectare. This results in a different mindset, where the farmer is conscious of inputs. Although there may appear to be a conflict of interest here for the co-operative, it must nevertheless be addressed in terms of the long term interests of the farmer and the co-operative.

We also asked the young farmers to indicate to what extent they sought agri-advice from the following sources (private advisors, Teagasc, co-operatives, discussion groups, neighbouring farmers and other farmers). The responses are presented below in Figure 18.

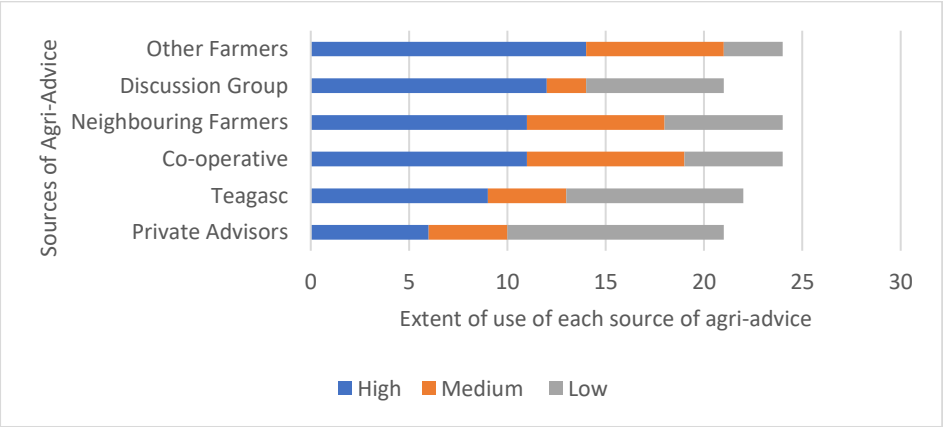


Figure 18: Extent of use of various agri-advice sources cited by younger farmers (n = 24)

[72] Brown, G., 2018. *Dirt to soil: One family's journey into regenerative agriculture*. Chelsea Green Publishing.

As can be seen from Figure 18, co-operatives are more widely used as a source of advice than either Teagasc or private advisors. It is interesting to note the high level of use of neighbouring and other farmers as a source of advice. This might explain why discussion groups among peers seem to work well as a source of advice and knowledge transfer. The relevance of such informal sources, such as learning from peers[73] and the influence of neighbours[74], must be considered in any discussion or evaluation of agri-advice services.[75] However, it was found that over 40% of the surveyed co-operatives do not operate discussion groups. This would seem to be a missed opportunity to engage with the general membership, but in particular with the younger farmer.

We also asked the farmer respondents for their level of satisfaction with the various providers of agri-advice. This is presented in Figure 19 below.

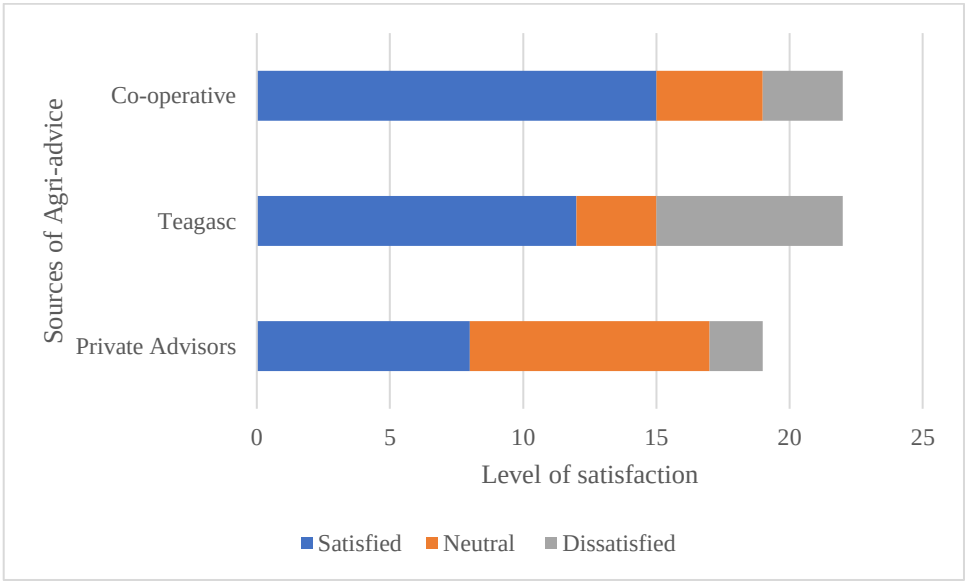


Figure 19: Level of satisfaction and sources of agri-advice of younger farmers (n =22)

As can be seen from Figure 19 above, the young farmers surveyed are most satisfied with the co-operatives in terms of agri-advice with only a very small minority expressing dissatisfaction. This is a very positive place from which to build greater engagement with the young farmer and to further enhance agri-advice services.

[73] Genius, M., Koundouri, P., Nauges, C. and Tzouvelekas, V., 2014. Herrera, B., Gerster-Bentaya, M., Tzouramani, I. and Knierim, A., 2019.

[74] Läpple, D., Holloway, G., Lacombe, D.J. and O'Donoghue, C., 2017

[75] Herrera, B., Gerster-Bentaya, M., Tzouramani, I. and Knierim, A., 2019.

We also asked the respondents what advice they were likely to source from co-operatives, Teagasc and private advisors. This was an open question and is presented in Table 1 below.

Table 1: What advice are you most likely to seek from the following organisations (open question)

Agri-advice sought	Co-operative	Teagasc	Private advisors
Milk advisory/Milk quality	✔	✔	
Dairy knowledge		✔	
Soil testing	✔	✔	✔
Grass management		✔	✔
Biodiversity			✔
Water quality		✔	✔
Silage testing	✔		
Crop management			✔
Sprays advice	✔		
Derogation advice		✔	✔
Advice on Fertilizer application	✔	✔	
Feed Advice	✔		
Feed and fertilizer purchase	✔		
Purchase of farm equipment/inputs	✔		
Animal dosage advice	✔		
Animal Breeding		✔	
Schemes		✔	✔
Mapping services		✔	
Knowledge transfer/Discussion groups/open days		✔	✔
Farm Building Design			✔
Business Planning			✔
Financial advice			✔
Help with carbon navigator & paperwork			✔
Farm relief	✔		

As can be seen from Table 1, the private advisors primarily cover business and financial planning. As mentioned earlier, this is an area of particular interest to the young farmers surveyed. Perhaps, more could be done in this space both on a one to one and more generally (where co-operatives could collaborate to provide the latter). The table shows that young farmers seem to link environmental advice more with Teagasc and the private advisors than with the co-op. However, when asked what areas they were happy with in terms of co-operative advice, one of the farmers mentioned 'biodiversity advice', but did not mention this as something likely to be sought from the co-operative. In view of their landscape advantage over the other providers, co-operatives could do more in this area or at least they could promote what they are doing so that farmers associate this area of advice with them as well as with the other providers.

It is also noteworthy that the farmers surveyed primarily associate co-operatives with the sales of inputs and advice in relation to these products. While there could be a conflict of interest here, farmers seem to value and trust this advice. However, it was mentioned that some of the co-operatives are not offering

competitive prices on their inputs, with some of the surveyed farmers indicating that they are buying outside the co-operative. This seems to be an area that might need to be explored also.

We also asked the farmer respondents what they were *most* and *least* happy about in terms of agri-advice offered by the co-operatives. The surveyed farmers were most happy with the advice they received on inputs from the co-operative and the accessibility of advice on milk quality. They also liked that the co-op 'rewards for fat and protein and not just yield'. The support from the co-operative was also noted and expressed through the following comments: *'help with keeping things going'* and '*financial support'*, highlighting that the co-operative acts as a buffer or support and that this is recognised and trusted by the respondents and offers them a sense of security. Perhaps it also indicates a level of 'co-operative know-how'[76] among these young farmers.

In terms of what they were least happy with, input prices were mentioned. Another point was that the co-operatives "*can sometimes offer contradictory information*". Some were also critical of the lack of competition in input prices. The farmers surveyed also indicated the need for budget planning. As mentioned above, this whole area of business/financial planning and general budgeting could be an area of development for co-operatives. The comment, '*the push to increase numbers'*, is also interesting and has been heard by researchers from other farmers as well. Those who have decided to increase herd size since the removal of the milk quota are often critical of co-operatives along with Government policy which has *pushed* farmers to grow over recent years.

The farmers were asked how they thought the co-operative could enhance its agri-advice service. Some of the suggestions were "*more one to one advisor services needed*" and assistance for the famer

in terms of "*business and financial planning for the farm*". Another suggestion was around more competitive pricing in terms of inputs. A number of the farmers from different co-operatives were of the view that inputs could be obtained elsewhere at a lower price. Health and safety was also mentioned as an area of concern where more advice is needed. The surveyed farmers were also asked to what extent they see the co-operative as relevant to their future as farmers. This is presented in Figures 20 and 21 below.

[76] Tregear, A. and Cooper, S. 2016. Embeddedness, social capital and learning in rural areas: the case of producer cooperatives. *Journal of Rural Studies*. 44, pp.101-110.

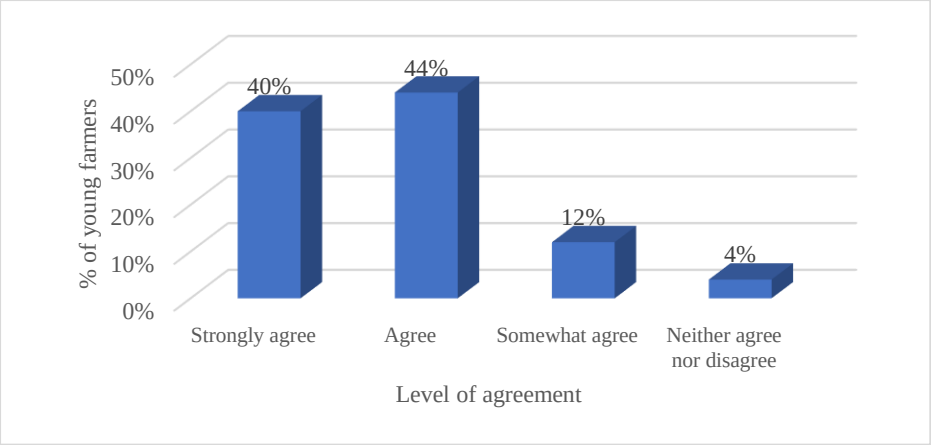


Figure 20: To what extent do you agree or disagree with the following statement "*I Consider agricultural co-ops relevant to my future in farming*" (n=25)

The younger farmers surveyed were also asked how relevant co-operatives are for the future of their own farm and to the wider farming community. 84% of the young farmers surveyed either strongly agree or agree that co-operatives are relevant to the future development of their own farm. This is a very positive endorsement for the co-operative. The assumption often made is that younger farmers are not interested, but this is clearly not the case.

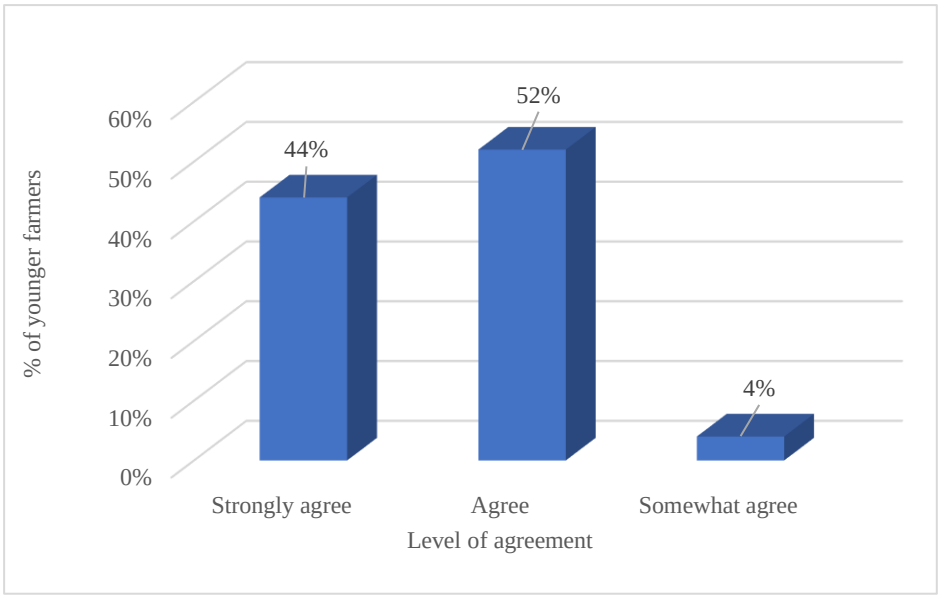


Figure 21: To what extent do you agree or disagree with the following statement *"agricultural co-ops are important for the future of Irish farming"* (n=25)

In terms of the wider farming context, the young farmers surveyed were very positive about the contribution of co-operatives to its future development, with 96% either strongly agreeing or agreeing with the statement 'agricultural co-ops are important for the future of Irish farming'.

We can conclude that these younger farmers recognise the value of co-operatives to their own farms and to Irish farming more broadly. The co-operatives can leverage off this recognition - an enhanced and relevant agri-advisory service is central to this.

As well as younger farmers, we also interviewed a number of intensive dairy farmers who are experimenting with environmental and biodiversity measures on their farms to capture their perspective on the agri-advisory service in the co-operatives.

2.4.3 Perspective of Intensive Dairy Farmers Who are Experimenting with Environmental and Biodiversity Measures on their Farms

All farmers, but particularly intensive dairy farmers, will have to fully engage with improving the environmental status of their farms, that is, by reducing emissions and improving biodiversity, water and air quality. They will need to introduce measures and make investments on their farms to meet these requirements. In addition, regulations on nitrogen fertiliser for 2022 remain unclear and any changes here will have significant impacts for intensive dairy production. The consumer side of the supply chain is also not guaranteed. While Ireland's dairy sector, supported by the *Bord Bia's Origin Green* programme, has benefited from a strong green image globally, the focus is increasingly shifting towards evidence-based sustainability claims. This will only intensify. Hence, the future of dairy farming is based on sustainability which will need to be at the very core of the farm operation, and not just on the periphery. A number of dairy farmers (both intensive and less intensive) are taking the lead here. We spoke to a number of these farmers about their perspective on what type of agri-advice is needed in the future and how co-operatives could contribute here.

We interviewed four intensive dairy farmers with cow herd sizes ranging from 90 to 350 cows who are all trying to enhance environmental running of their farms. These environmental initiatives range from greatly reducing nitrogen use on their farms, introduction of clover and mixed swards improving soil biological health, investing in water quality improvement measures, enhancing biodiversity on their farms and so on. All of these farmers are members of dairy co-operatives.

When asked where they source their advice, most of the advice appears to be coming from peer-to-peer learning in the form of *discussion groups* and *WhatsApp groups* consisting of other farmers. The discussion groups are facilitated by private independent advisors and Teagasc or ex-Teagasc advisors. The farmers seem to be able to turn to these facilitators with any follow-up questions after the discussion group, thereby providing additional support. Some of the farmers highlighted the value of '*open days on signpost or model farms*". They also highlighted the role of '*doing their own research"*, linking with other like-minded farmers either here or abroad, and engaging with related webinars. They also pointed

out the value of "learning from doing" and experimentation, where '*you find out one thing and then this leads to something else*". They use the co-operative for direct advice, but more so on *price of milk* or at times certain input related questions and one farmer spoke about *fodder testing*. Another highlighted that the co-operative newsletters can be good – but that they "*may only be reaching the farmers who are either already aware or will access through print media….there is a need to find a way to get to farmers who don't access this material*".

While they value the general role of the co-operative, there was consensus across the group that the focus of agri-advice in the co-operatives is primarily sales driven. This was summarised as follows:

> "*Agri-advice function in the co-operatives is all about selling……always selling me something….and often something I don't need.*"

We asked the farmers how to better align the agri-advice model in the co-operative with the needs of the farmer. Farmers had different views here. One farmer indicated there was a need to *"completely re-build trust, that trust is not there at the moment."* Another farmer was of the view that alignment would be very difficult, as the business model and mindset of the co-op are based on sales. The advisor or co-operative 'rep' is measured on '*sales targets or performance'*, so the co-operative advisor becomes locked into this sales requirement. One of the farmers concluded that perhaps it would be very difficult for the co-operative to offer independent advice at the technical level required and suggested that it should bring in this speciality as independent from sales. This farmer also pointed out that perhaps there is a conflict for the farmer, "*if the co-operative is selling less inputs, the price of milk will be lower*". However, beyond advice, the co-operative could support the farmer with their sustainability efforts through 'discounts' on certain sustainability products and by offering a 'sustainability bonus' added to milk price. In our survey, we found that some of the co-operatives had a balanced orientation (between sales, farm development and regulatory) in their agri-advisory suggesting that there may be a transition away from a sales-driven orientation alone. However, the key in this transition should situate environmental at the centre of an agri-advice service which integrates economic, environmental, social and cultural dimensions.

Another issue highlighted by the interviewed farmers was the fact that the skill set of the advisors (co-operatives and others) does not align well with the sustainability requirements of the farms. One of the farmers indicated that "the skills required are lacking". Another stressed that available advisory skills are more in the "*agronomy rather than ecology space – we need more of the ecology*". One of the farmers indicated that, when the co-op hires somebody with ecological skills, they end up,

> "*Stretching them too thin…when they then don't have the impact that they should have*".

These farmers have been experimenting on their land for some time and now feel that they're "*ahead of much of the advice available*". Two of the farmers indicated that they had issues on their farm and started to ask questions and experiment and then experiment a bit more. They fell into biological farming in this way. Through this experimentation, these farmers have acquired a significant body of farm development and environmental knowledge. It would be beneficial to leverage off this knowledge and enhance the links between these farmers and young farmers starting out.

However, while the farmers felt that re-alignment of the co-operative agri-advisory would be difficult and that "*co-ops would really need to up their game*", they also felt that now may be an opportune time for such re-alignment. One of the farmers summarises this as follows:

> "*Time is ripe…farmers are very aware now and are open to looking at costs…ideal time to drive on a sustainability agenda".*

However, they stressed that there is a need for a 'sea change' and that it cannot be 'tipping around the edges'. They also indicated that co-operatives, like other bodies doing a lot of corporate talk about becoming 'carbon neutral', are not matching this with helping farmers on the ground. They indicated that there is a 'greater need for leadership', but at the moment "very little leadership coming from any sector".

From speaking with these farmers, it is evident they are deciding to push ahead themselves and go beyond minimum requirements. The dairy co-operatives need to nurture this nascent leadership as they are leading both the future of the dairy sector and of the co-operatives themselves. Effectively, they are the future. Co-operatives need to engage and leverage from these farming innovators and entrepreneurs within their own regions to enable change and diffusion of innovation in the wider farming community in their own regions. We now look at the opportunities in collaborative projects.

2.4.4 Models of Collective and Landscape Approaches to Agri-Advice

There are a number of collaborative agri-advice models between/in the co-operatives and other organisations. Some operate more at a national level, such as ASSAP and Signpost Farm Advisory. Others, such as *Carbery Greener Dairy Farms™*, operate at a regional level. We will briefly discuss each below.

2.4.4.1 National Collaborative Models

Signpost Farm Advisory

Signpost Farms was launched in May 2021 and is a joint national collaborative programme between farmers, Industry (including the Dairy Co-operatives) and State agencies (including DFAM, Bord Bia & Teagasc). The project is co-ordinated by Teagasc. There are 120 farms including 56 dairy farms. These farms act as model farms, partaking in baseline measurements and the development of on-farm Sustainability Management Plan. Carbon sequestration is also measured on some of the farms which will feed into the EPA emissions' measurements. Signpost also has an advisory dimension, with the purpose of mobilising advisors (private, co-operative and Teagasc) and teachers "to engage farmers and students in climate action". This project has significant potential in terms of the development of agri-advice in the co-operatives. However, as the project is national, it has perhaps less impact on the development of clustered landscape responses to the environment.

Agricultural Sustainability Support and Advisory Programme (ASSAP)

ASSAP, part funded by the Department of Agricultural, Food and Marine, is a joint advisory service provided by the Dairy Co-operatives, Teagasc and Local Authorities. The programme consists of 29 advisors (20 from Teagasc and 9 from the Dairy Co-ops) and 13 Local Authority Community Representatives. The programme identifies regions with difficulties which are then designated as areas of priority by the EPA. It takes an advice-led and collaborative rather than sanction or regulatory approach with the farmer. The governance of the ASSAP is presented in Figure 22 below.

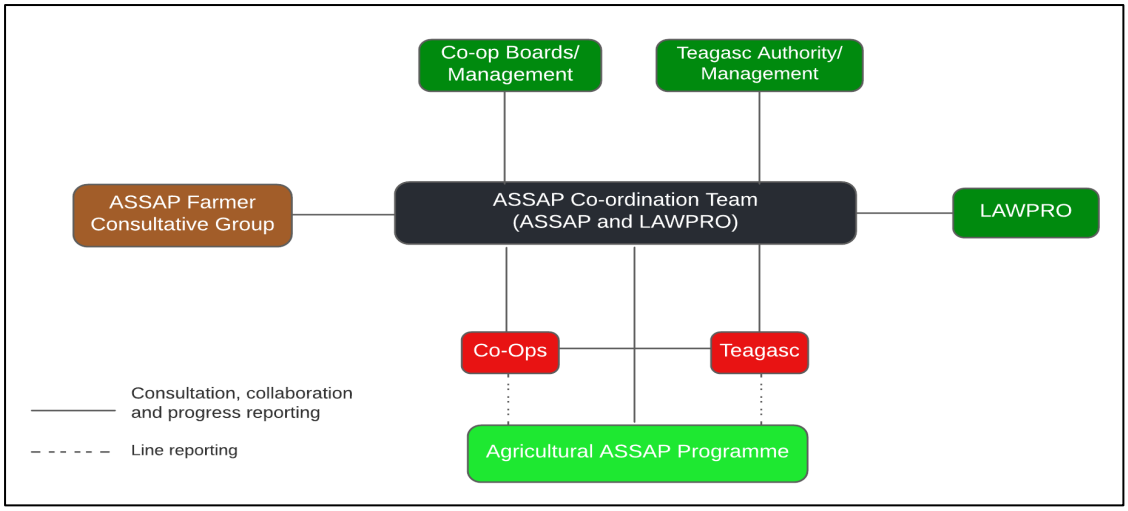


Figure 22: ASSAP Governance Structure

Source: ASSAP Interim Report, No 1, 2018-2019, Teagasc & Dairy Sustainability Ireland.

While the programme is in its early stages of introduction, ASSAP's first interim report released in June of 2020 showed promising results: 1,168 farm assessments had been completed by the end of 2019, with a recorded 96% of farmers engaging with the programme and 89% of farmers agreeing to implement advised actions (Teagasc, 2020). This a very important programme in terms of water quality advice and improvement. However, as it focuses on priority areas, it will only partially contribute to a landscape response to sustainability.

2.4.4.2 Regional Collaborative Model

Carbery Greener Dairy Farms™ [77]

Carbery Greener Dairy Farms™ is a dairy efficiency and sustainability collaborative programme between Carbery and Teagasc. The programme was set up in 2012, starting with 12 dairy farmers and now extended to 62 dairy farmers. Each farm has been assessed for carbon footprint, water and energy usage and soil fertility to create a baseline. Based on this assessment, various environmental efficiency measures have been introduced to improve performance and also to achieve financial savings. The programme was based on a previous European project called the Dairyman Project, involving 120 dairy farmers in 10 regions of North West Europe. Carbery was the first to start such an endeavour in Ireland. While the farms are not all adjacent to each other, they are all located within a relatively small territorial area. The Carbery Green Dairies Project could be a model of development for other co-operatives because although all the farms are not adjoining, it does have potential to develop a landscape approach.

2.5 Conclusion

This section focused on exploring the Dairy Co-operatives in terms of agri-advice services offered. It was found that the co-operatives offer a range of agri-advice services. While many of the co-operatives had a dominant sales orientation in their agri-advice, not all had, and some balanced this with a regulatory and farm development orientation. Perhaps this may indicate that there is the beginnings of a transition in these co-operatives towards a different and more integrated type of agri-advice. In terms of the delivery infrastructure of agri-advice, it was found that 71% of the surveyed co-operatives have a dedicated agri-advice team. As agri-advice is important to the business and environmental requirements of both the co-operative and the farm, investment in increased personnel resources would seem to be prudent. However, in addition to personnel, technology can also play a role in enhancing agri-advice. The CRM example presented in Section 2.3.1.2 highlights this point. In addition, co-operatives have significant access to data which could be beneficial in advancing individual farm development (business and environmental) and in enabling a landscape approach to sustainability.

[77] Byrne, McCarthy & Hennessy, 2020

Regarding the latter, co-operatives in partnership with farmers and technology could map the farms in their region and, based on measurements, develop more tailored context-specific responses to enhancing sustainability in regional agriculture. As with previous studies and this study, it was found that farmers value peer-to-peer learning through discussion groups (formal and informal) but that 43% of the surveyed dairy co-operatives do not offer discussion groups. Introduction of discussion groups would be beneficial to all farmers, but in particular to younger farmers and those who are trying to experiment with environmental and biodiversity measures on their farms. In terms of delivery mechanisms, we also explored the role of external collaborations. It was found that the surveyed dairy co-operatives which have a farm development or balanced orientation to the agri-advisory service are more likely also to be engaged in external collaborations. In addition, this engagement in external collaborations increased the likelihood of the dairy co-operative possessing a wide range of environmental related skills. To explore the future opportunities for the development of agri-advice, we surveyed young or next generation farmers and interviewed dairy farmers who are experimenting with environmental and biodiversity measures on their farms. Both of these groups access agri-advice from different sources (private, Teagasc, co-operatives and other farmers) with the younger farmers stressing the importance of farm development advice in particular. An interesting finding here is that the younger farmers source and associate environmental and farm development advice with providers other than with the co-operatives. This might, in the longer-term, reduce the relevance of the co-operative to these new farmers. This finding is further highlighted by the fact that the farmers who are further down the environmental path on their farms (and it should be remembered that this is the path all dairy farms will need to take) do not seem to seek agri-advice from the co-operatives beyond price of milk and inputs. The relevance of the co-operative to these farmers is much reduced. Hence, there is a need for the dairy co-operatives to align their agri-advice to the future needs of dairy farming, otherwise there is a danger of reduced relevance into the future.

There was consensus among the farmers who are experimenting with environmental measures that this alignment away from a sales-driven orientation in agri-advice in the dairy co-operatives will be challenging. It will involve the re-building of trust (where it is not about making a sale) and the enhancement of nature-based skills in the agri-advice team. However, as well as developing their own skill in this space and collaborating with external players, co-ops will also need to draw on the significant knowledge bank of their own farmers and find innovative ways to leverage this. Regional collaborative models such as the *Carbery Greener Dairy Farms™* could help to bring all these requirements together. In addition, these types of collaborative initiatives are in line with the Co-operation payment models in the New CAP 2023-2027. Hence, the territorial co-operative payment models developed in the Netherlands need to be explored by the dairy co-operative for relevance in the Irish context.

Dairy co-operatives have particular advantages in the area of agri-advice provision in terms of their collaborative and landscape-based structure and their access to data. Dairy co-operative agri-advisory services need to position themselves to unlock these resources for the betterment of the co-operative and their farmer members.

Section 3: Livestock Co-operative

3.1 Introduction

This section presents the findings from an online survey and interviews with key stakeholders.

3.2 Geographic Profile and Survey of Livestock Co-operatives

We first present the overall geographic profile of the livestock co-operatives in Ireland (ROI). This is presented in Figure 24 below.

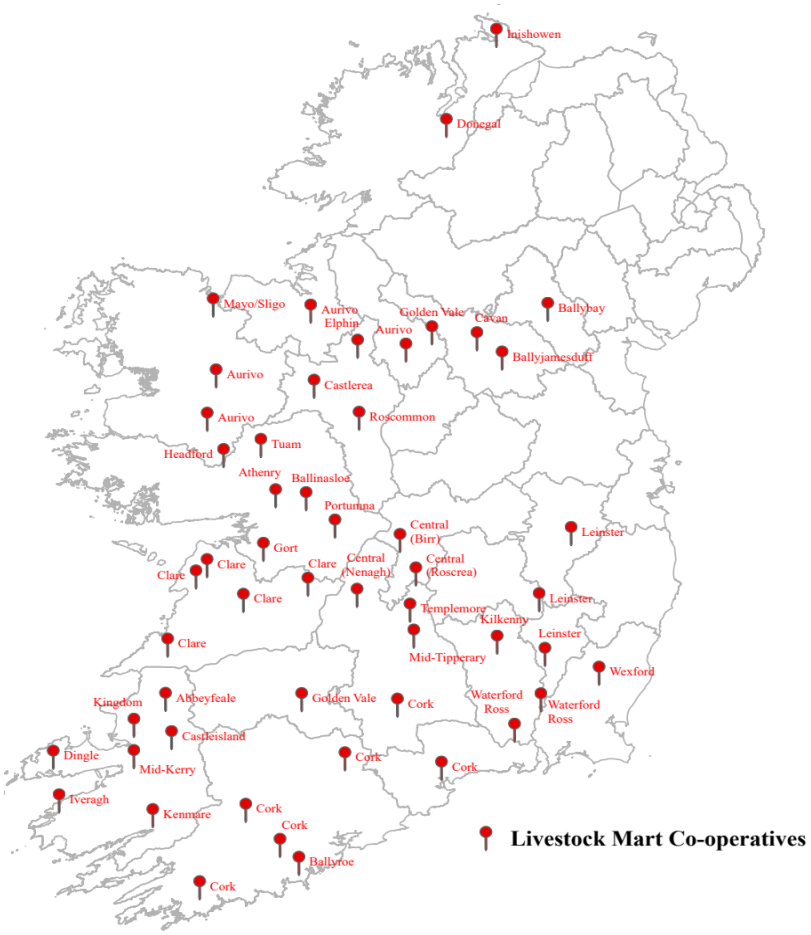


Figure 23 Geographic Spread of Livestock Co-operatives
Source: Map produced by Tim Bohan and Noreen Byrne, UCC.

As can be seen from Figure 23 above, there is a wide geographic spread of livestock co-operatives across the country.

The survey sought to identify the services and expertise offered by livestock co-ops to farmer members. The survey was sent out to the livestock co-operatives. Survey data was collected from 11 co-ops (response rate 39%). The survey was supplemented by interviews with key witnesses within and close to the sector.

3.3 Livestock Co-ops: Profile of Services and Expertise

The survey presented a list of 19 potential service and expertise areas. Participants were asked to indicate which of the services their co-operative offered, including the option to select either none or add other/additional. Figure 24 illustrates the types of service and expertise areas and the number of co-ops that responded as providing the service.

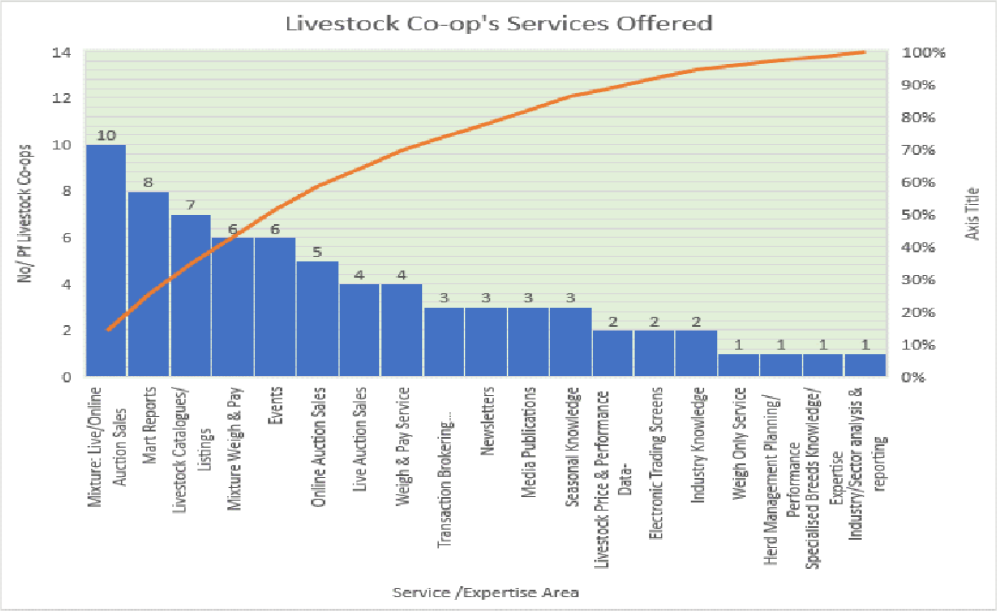


Figure 24: Livestock Co-ops: Profile of Services

As can be seen from the Figure 24 above, the most active service areas are auction sales (live and online), mart reports, livestock catalogue/sale listings and weigh and payment services. These are generally the core operations of a mart. Less active services areas are herd management planning/performance, specialist breed knowledge/expertise and sector analysis and reporting. These services are more in the advisory space, offering the potential to differentiate the mart through farm development services.

3.3.1 Profile of Marts Surveyed

In performing analysis of the survey data, the research team considered it useful to contextualise the responses in relation to the service offering further according to 1) geographic region (Midlands, South-West, and West/Northwest), 2) size of membership and 3) turnover and profitability. This was to explore whether there are differences in services offered relative to these factors. Additionally, these contextual factors add more depth to the research by exploring the nuance of services and expertise across the livestock co-operative sector. These profile characteristics are presented in Table 2 below.

Table 2: Mart Profile Characteristics

Mart Activity	
Dairy/Beef/Sheep Beef/Sheep Dairy/Beef	6 2 1
Geographic Location	
Midlands South West West/North West	3 3 5
Membership Size	
>2,000 members 500-1,999 members <500 members	3 4 3
Total Sales	
<€1million €1-4 million >€4 million	3 3 3
Net Profit & debt/equity	
Profitable & carrying minimal or no debt Profitable/carrying debt Showing loss/carrying debt	7 2 1

The greatest number of survey respondents were based in the West and North-West region. Three of the livestock co-ops have over 2,000 members, with four in the group between 500 and 2,000 members and three in the smaller category with less than 500 members. Five of the co-operative marts have less than €1 million in total sales with two co-operatives in the 'more than €4 million' category. Table 3 below presents services offered by geographic region (Midlands, South-West, and West/Northwest).

Table 3: Geographic location of the Mart and Services Offered

Agri-Advice Services	**Midlands (3)**	**South-West (3)**	**West/Northwest (5)**
Livestock Auction Sales Live Online Mix of both	✔✔ ✔✔	✔ ✔✔	✔✔ ✔✔✔✔✔
Livestock Catalogues/Listings	✔✔	✔	✔✔✔
Transaction Brokering/Negotiation	✔		✔
Weigh & Payment Services Weigh Only Weigh & Pay Mixture of both	✔	✔ ✔✔ ✔	✔ ✔✔✔✔
Herd Management Planning/Performance			✔
Livestock price & Performance data – Recording/tracking			✔✔
Electronic trading screens			✔
Mart reports	✔✔	✔	✔✔✔✔
Events	✔✔	✔✔	✔
Newsletters			✔✔
Media publications	✔		✔✔
Industry knowledge	✔		✔
Seasonal knowledge	✔	✔	✔
Specialised breeds knowledge/expertise			✔
Industry/sector analysis & reporting			✔
DAFM schemes/supports			✔✔
In-house technical expertise/knowledge		✔	✔
External technical expertise/knowledge			✔

Table 3 above indicates that, by region, co-operatives in the West/Northwest region have the broadest range of services. This suggests these co-ops have diversified their service offering beyond the core-service activity of a mart (livestock buying/selling). When exploring regional location with ICOS data on membership base and financial profile, it was found that the West/Northwest has a high membership base, a high turnover and strong financial profile. This would suggest that membership base, turnover

and profitability are differentiating factors in the service offering, that is, livestock co-ops with higher membership and a stronger financial profile would seem to indicate a strategy of diversifying their service offering beyond the more apparent core mart services (livestock sales and related services).

3.3.2 Livestock Co-ops: Dimensions of Services offered

The study considered it useful to explore whether livestock co-ops offer other services in addition to their core buying/selling services, such as services and expertise that are more tailored/ contextualised to the circumstances of the farmer and the characteristics of their farm enterprise (e.g. farm development) or appeal to the broader informational needs of farmers.

From the service/expertise areas, we catalogued these across different dimensions: '*Transaction plus'*, *Farm Development* and *General Education*. The services falling into each category are presented in Table 4 below.

Table 4: Livestock Co-ops: Dimensions of Services offered

Categories	**Services**
Transaction Plus	Livestock catalogues/listings Transaction Brokering/negotiation Electronic Trading Screens Mart Reports
Farm Development	Herd management planning/performance Livestock price & performance data - recording/tracking Specialised breeds knowledge/expertise DAFM schemes/supports In-house technical expertise/knowledge External technical expertise/knowledge
General Education	Newsletters Events Media publications Seasonal knowledge Industry knowledge Industry/Sector analysis & reporting

We explore the number of marts offering services under each of these categories. This is presented in Figure 25 below.

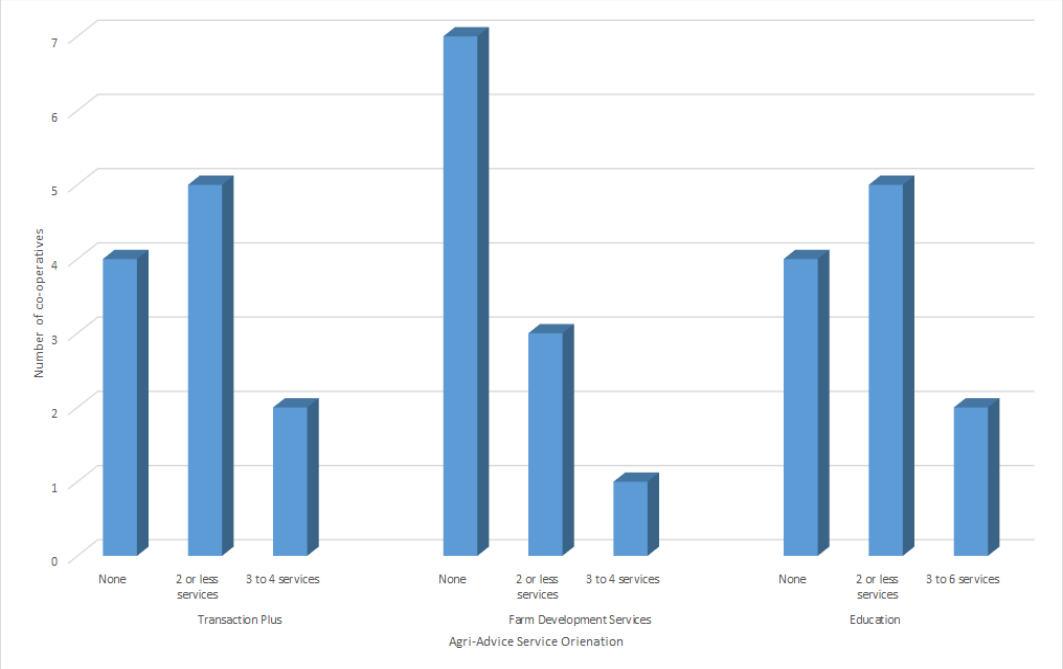


Figure 25: Agri-advisory categories in the surveyed co-operative marts

As can be seen from Figure 25, livestock co-ops provide additional services beyond their core service activity with seven marts offering 'transaction plus' services, four offering 'farm development' services and seven offering 'general education'. It is interesting to note that four of the co-operatives are not offering any of the 'transaction plus' services. These marts tend to be located West/North West and Midlands. We explored the farm development and general education services further. This is presented in Figure 26 below.

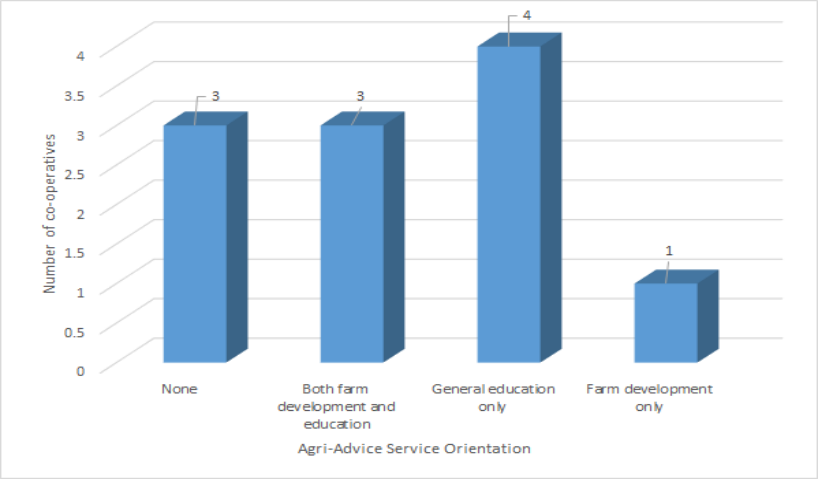


Figure 26: Agri-Advice Service Orientation (Farm Development and Education Services) and number of co-operatives

As can be seen from Figure 26 above, three co-operatives don't offer any services in either farm development or general education. Five co-operatives offer one or the other and three offer services in both farm development and general education. One of our key witness interviews highlighted that marts

have not given significant attention to diversification into other services as the weekly pressing core business of the mart takes priority.

We also explore this variable in relation to co-operative mart profile characteristics. This is presented in Table 5 below.

Table 5: Profile characteristics and agri-advice services offered

Profile Characteristics	None	Both Farm Development and General Education	General Education only	Farm Development only
<u>Geographic Profile</u> Midlands South West West/North West	✔ ✔ ✔	✔ ✔✔	✔ ✔✔ ✔	 ✔
<u>Membership</u> >2,000 members 500-1,999 members <500 members	✔ ✔✔	✔ ✔	✔ ✔✔ ✔	 ✔
<u>Total Sales</u> <€1 million €1-4 million >4 million	✔✔ ✔	✔✔	✔✔✔ ✔	 ✔
<u>Profitability/debt</u> Profitability/ Carrying little or no debt Showing loss/carrying debt Profitable/carrying debt	✔✔ ✔	✔ ✔	✔✔✔ ✔	✔

Possibly the most interesting space here is those marts that are offering both 'farm development' and 'general education'. Both of these services allow the mart to stay connected with their farm members. It also creates a platform for the co-operative to add particular value to the farmer members beyond the transactional sale of their livestock. It is also the space where the mart can become more involved in the agri-advice space. As can be seen from Table 5 above, those that are offering services in both farm development and general education tend to be located in the West/North West and tend to be profitable and carrying little or no debt. A key witness close to the sector pointed out that smaller marts in peripheral areas tended to diversify more, whereas the larger marts tend to remain specialised where '*their core focus is on buying and selling and they are kept going at that'*.

3.4 Expertise

We also asked respondents to indicate their expertise across a number of areas as outlined in Figure 27 below.

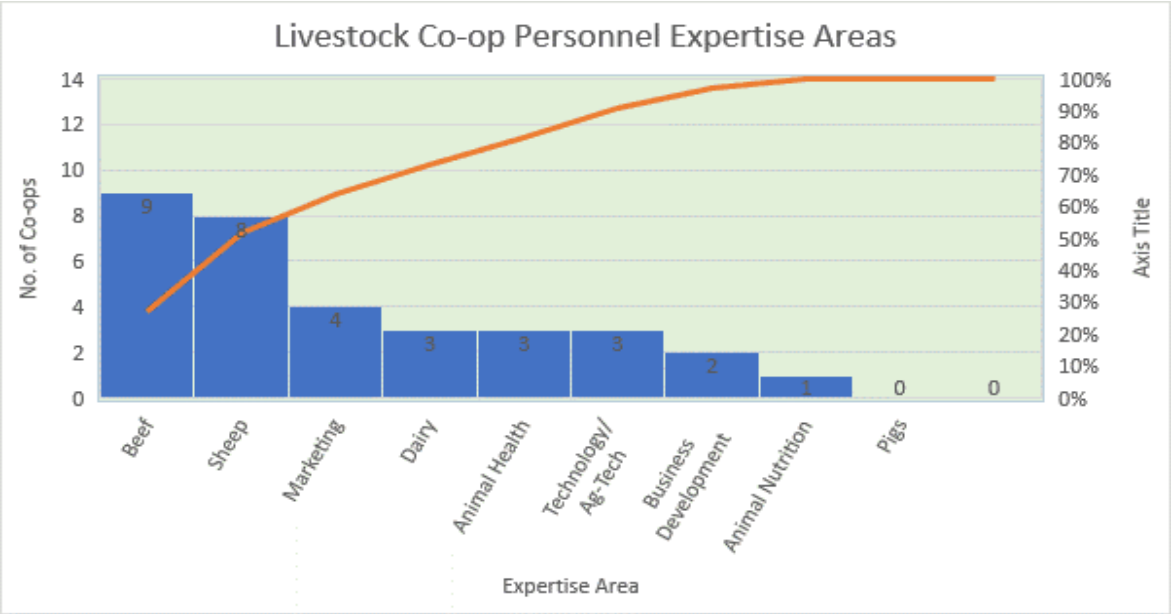


Figure 27: Livestock co-op personnel expertise areas

This chart illustrates the main expertise areas of Mart personnel. As well as the areas of expertise related to core services, there is also expertise beyond these areas, namely in animal health/nutrition, ag-tech and business development. Hence, there is scope here to develop farm development services in addition to the core areas. Figure 28 below focuses on the farm development skills.

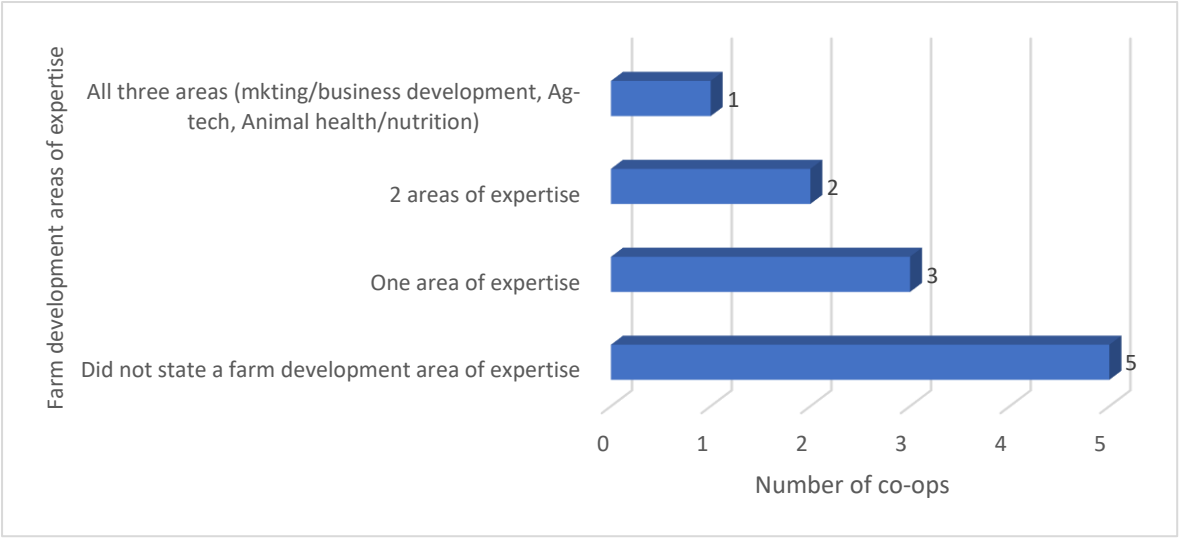


Figure 28: Farm development areas of expertise in the Livestock Co-operatives

As can be seen, five of the livestock co-operatives did not state/claim to have expertise in these farm development type services. A key witness close to the sector highlighted that co-operatives themselves or through collaborations need to strengthen their farm development expertise which in turn will build the capability and profitability of their farmer members. Otherwise, farmers will be *'lost out of the system*' which will in turn weaken the medium to long term viability of the mart sector.

We also cross-tabulated the level of farm development expertise indicated with farm development/educational services offered. This is presented in Table 6 below.

Table 6: Crosstabulation between farm development/general education services offered and farm development expertise indicated

Farm Development Expertise indicated	**Farm development/general education services offered**			
	None	Both farm development & general education services	General education only	Farm development only
Did not state any farm development area of expertise	1	1	3	0
One area of expertise	2	0	1	0
2 areas of expertise	0	2	0	0
All three areas of expertise	0	0	0	1

As can be seen from Table 6 above, co-operatives with farm development expertise are more likely to offer farm development services. Developing expertise in this area of farm development would be both beneficial to the marts and the farmer members in order to create momentum in this space. Collaborations may also create such momentum - we explore this next.

3.5 Collaborations

The survey sought to explore whether the co-ops were involved in any collaborations/partnerships in the delivery of its services (such as with other co-ops, colleges/universities, private marts, Teagasc, breed societies, Bord Bia or other). This is presented in Figure 29 below.

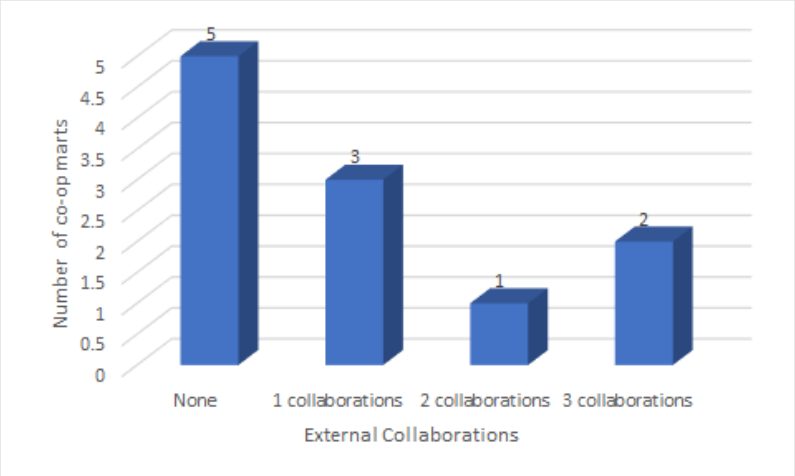


Figure 29: External collaborations in the co-op marts

As can be seen here, six of the co-op marts have collaborations with at least one body outside the mart, while five indicate that they do not have such collaborations. At a regional basis, the survey data indicates that co-ops in the West/Northwest are most active, with an average of two collaborations, while co-ops in the midlands and southwest have an average of one. Breed societies are an active area of collaboration for co-ops. In Figure 30 below, we explore the crosstabulation between those which offer farm development/education services and the extent of collaboration.

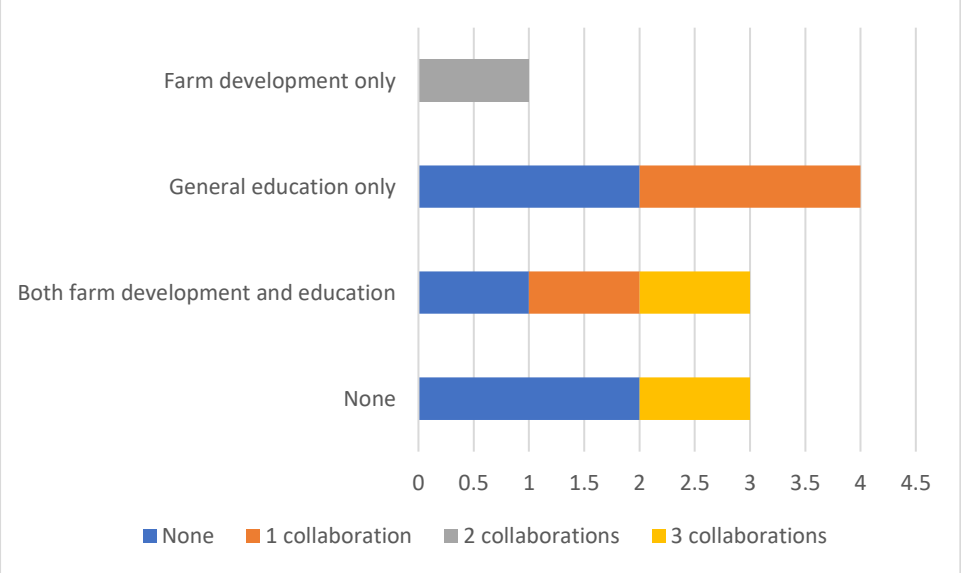


Figure 30: Farm development/education services offered and extent of external collaborations

As can be seen in the above Figure 30, there is not a clear link between external collaborations and the extent to which the mart offers farm development/education services. However, the collaborations may need to be targeted and strategic as pointed out by an interview with a key witness in the sector. He outlined one such collaboration which has worked very well as the ‘transnational initiative”. This is described in Box 2 below.

In 2000, three livestock co-operatives in South Kerry (Iveragh, Mid-Kerry and Kenmare) and South Kerry Development Partnership Ltd (SKDP) formed a collaborative project called South Kerry Transnational Project. The purpose of the project was to direct selling weanlings to farmers in Northern Italy. The SKDP website was used to show the weekly price of animals. This assisted both groups in coming to agreement on price. The Italian farmers required R or U grade heifers and they had a preference for Red Limousine, White Charolais and Belgian Blue. The farmers in Italy were prepared to pay a premium for the heifers provided they got the quality animals. The BSE situation and the outbreak of Foot and Mouth brought the project to an end.

Box 2: South Kerry Transnational Project

The project discussed in Box 2 above highlights an interesting collaborative project between the marts and a partnership company. While this project is no longer running, it nevertheless highlights the opportunities that could be developed.

3.6 Future Development Opportunities

To explore future development opportunities, we draw on the survey, the interview with one mart manager, a key witness close to the mart sector and a farmer who is a member of one of the marts. As with the dairy co-operatives, farm development would seem to be an important area of agri-advice development in the future. However, it was found that only 36% of the surveyed marts are engaging in farm development type advice. The farmer interviewed felt that the marts could make greater use of their data to aid farm development and decision making on the farm. This farmer summarised it as follows:

> "*Marts have the data – could share that to help the farmer."*

One of the mart managers and the key witness highlighted that in terms of data, the marts have become 'marginalised' in recent years. In the past, the herd number was linked in with the mart data, where the mart could track an animal and know its history. With the new DAFM identifier number, the marts are not integrated and hence do not have the same access to data as they did in the past. The mart manager is unclear why this change was made but felt that it limits the development of the livestock co-operatives.

One of the mart managers interviewed was of the view that some farmers, particularly older farmers at certain times of the year, require manual help to carry out certain on-farm tasks, for example, *"dehorning calves, tailing lambs and so on*". He suggested that the mart could act as a co-ordinating entity in organising this type of help, either from other farmers or paid help. He indicated that farmers,

"don't mind paying, they just need to be able to access the help….this is where the mart could come in as a co-ordinator" and

"many other farmers would not mind helping either".

The mart manager was of the view that the marts could link in better with the local development partnership companies in the creation and development creation of such farm development/welfare initiatives.

Both the mart managers and the key witness highlighted the role of the livestock co-operatives in terms of 'mental wellbeing' and contribution to 'social capital' in their regions. One of the mart managers suggested that the marts are like the 'men's sheds' for farmers who may not be attracted to the normal men's sheds. He said that farmers come to the mart, where some might have,

"*financial troubles… or other personal problems….or no Will made and not sure how to go about it".*

The nature of the mart, where farmers naturally interact as they watch and discuss the livestock or eat together in the canteen, allows for the emergence of personal conversations between the farmers or with mart personnel. In this sense, the mart is very similar to the concept of the men's sheds. This mart manager indicated that sometimes farmers go to the mart and maybe just buy 'one bale of hay' and then come in for a *'chat to the mart'*, where '*it's like they just need an excuse to come down to the mart'*. One of the mart managers indicated that the mart could possibly help farmers with difficulties to access counselling. The key here, according to the mart manager, is to *'spot something before it becomes a problem*'. This mart manager indicated that, since many social outlets were cut off during the COVID pandemic, for many of the farmers the mart is often the only social outlet available. While it might be argued that this does not make business sense, it does contribute to the mental well-being of the farmer, which in turn contributes to farm development of the members' farms. We are reminded of one of the comments from a young dairy farmer in Section 2, where he highlighted the role of the dairy co-op as *'help with keeping things going'*. Livestock marts play this hidden and unrecognised role in helping to keep things going, particularly for many beef and sheep farmers who are living through very challenging times. This must surely be recognised and may possibly be contributing to reducing the burden on the public health system. Of course, as is often the case, this will not be known until such time as entities like the livestock marts are no longer in existence.

The social capital and the physical meet up in marts create the opportunity for peer-to-peer learning between farmers and between the mart and farmers. In this sense, it could be said that this aspect of the mart contributes to a hidden or informal type of agri-advice.

This bedrock of social capital could also play an important role in theability of livestock co-operatives to act as an 'existing institution' in landscape approaches to agricultural development.

The social capital aspect, along with the 'selling and buying' operations of the mart, are the fundamental every day work of the mart. However, as livestock marts by their nature tend to be transactional and focused on day to day operations rather than the strategic, they also need to create space for the strategic development of the mart to ensure that they maintain their relevance. One of our key witnesses who has been close to the sector for many years summarises it as follows:

> "*Marts by nature are a weekly business, therefore focus of the mart manager tends to be to prioritise the day to day buying and selling, how are we performing on a week on week v targets basis. This is what keeps money coming in, the bills and staff paid. Strategic development planning (even at the board level of marts) around for example how to enhance future viability and innovate in service offerings to members hasn't been that strong. While there are some examples, there is a lot of scope to improve in general".*

All of this makes for '*reactive thinking'* whereas they need,

> "*to think and innovate in a more proactive way, to anticipate unmet needs and to respond to a competitive environment'.*

In addition, even the timing of the board meeting impacts – *"often late at night which makes facilitating this type of work challenging"* (key witness interview).

The key witness suggests strategic collaborations (see Box 1 for an example), more education, and greater board operation as three areas that have potential. In terms of the board, he suggests that within the board there should be five or six people focusing on innovation and *'new stuff'*. If such a remit existed, it would create greater space for innovative thinking.

With regard to education, the key witness pointed out that, firstly, this is a key co-operative principle. Secondly, the marts need to make greater use of the data that they already have to develop education and training courses for their farmer members. The purpose of these courses should be to build farm capability and profitability which in turn will benefit the mart in the long term. Such educational programmes need to pay particular attention to the next generation of farmers because,

> "*it is this group specifically that can contribute the most to fostering the innovation and resource efficiency, co-operatives have the knowledge infrastructure that can support this".*

However, marts could do more in terms of leveraging the social capital dimension of the mart,

> *"as an outreach strategy, for example organising events such as a farm walks/visits, discussion groups – very few do this – very important for morale boosting, networking and building positive mindsets".* (Key witness close to the sector)

This key witness highlighted that this type of work is "*fundamental to building farmer capability and innovation"* and to the development of a farm development/educational agri-advice service in the livestock marts.

In terms of strategic collaborations, it would appear that more could be done here and that when done with care can yield significant results. It was pointed out by one of our key witnesses that collaboration between marts would also be beneficial but that,

> *"in reality it is hard to get marts to work together….marts see themselves as independent entities and competing for the same market*".

In addition, there is potential for marts to collaborate with other organisations working regionally, such as the rural development organisations (see Box 1), credit unions and dairy co-operatives. The CAP 2023-2027 advocates a more regional/landscape approach in its payment schemes, where it is suggested that farmers will form collaborations regionally to access some payments through the Co-operation Projects as part of the AECM. It is expected that up to 20,000 farmers will take up these CPs. How can marts play a greater role here in enabling these collaborations?

3.7 Conclusion

The key conclusion to this co-operative mart section would have to be that there is significant potential for the marts to contribute more to AKIS and some marts are clearly diversifying and making in-roads in this area. It is also clear that marts are very live transactional spaces and almost have the intensity of a stock market setting. This type of context is very much about the 'now' and makes it difficult to create the space for longer term strategic thinking. However, as pointed out above, marts have the knowledge (particularly the data and knowledge of their members) and social infrastructure to build their farm development expertise and services.

Section 4 Other Co-operatives Offering or Supporting Agri-Advisory Services

4.1 Introduction

This section briefly explores a number of other co-operatives which offer agri-advisory services, such as Farm Development Co-op (FDC Group and FDC Co-op), Irish Farm Accounts Co-operative Ltd (IFAC) and Farm Relief Services Network (FRS Network). We also discuss Credit Union Cultivate in terms of its potential support function to agri-advice initiatives. All of these entities are also of interest due to their co-operative structure and regional network. This section of the report was not part of the original remit of the research and hence is supplementary. However, we felt that these co-operative organisations play a very important role within the farming sector and either play a direct or supporting role to agri-advisory function within agriculture.

4.2 Farm Development Co-op (FDC Group and FDC Co-op)

FDC Group is considered in this report because of it co-operative dimension and its particular role in agri-advice. FDC Co-op was founded in 1973 in Dunmanway, Co. Cork. A driving force in its formation was Jack Murphy who acted as Secretary of the Co-op from 1973 to 2018. The FDC Co-op plays a central role in today's FDC Group which has evolved into a multi-disciplinary service provider serving primarily rural Ireland, with over 25,000 clients.

4.2.1 Regional Network of FDC Group Services

The FDC Group has offices in many counties across Ireland, with its Head Office based in Cork City. It has 430 staff operating across 39 office locations. Its client base consists of farmers, SMEs, family businesses, commercial agribusiness, self-employed professionals and contractors offering a wide range of services. FDC particularly stresses its 'local presence' and indicates that it is committed to having a strong presence where their clients are located (www.fdc.ie). This local and regional presence is presented in Figure 31 below.

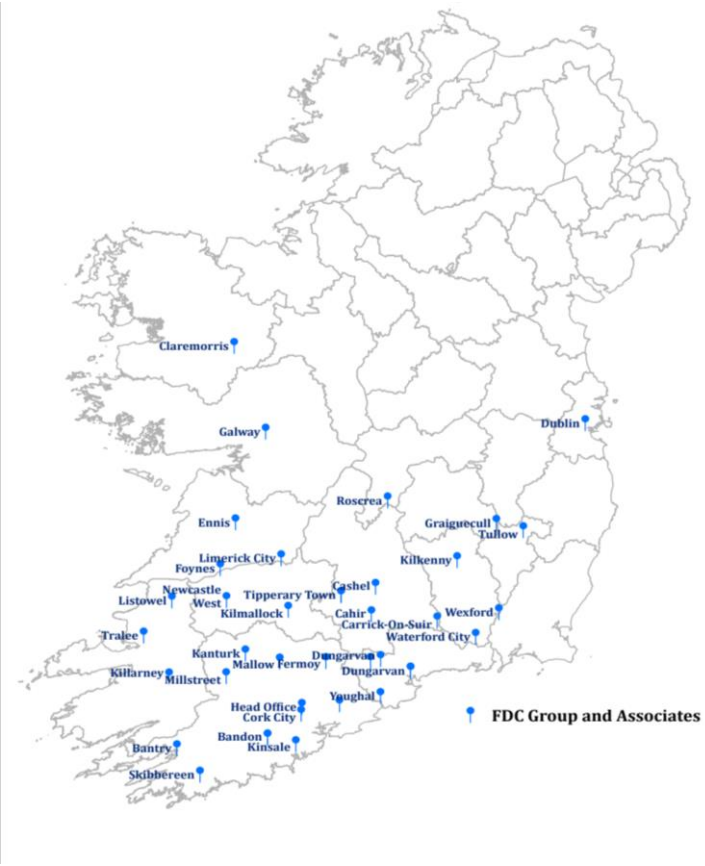


Figure 31: Geographical Spread of FDC Offices
Note: Map produced by Tim Bohan and Noreen Byrne, UCC.

This map shows the breadth of FDC Group's reach across the south and midlands of rural Ireland. This embedded nature, along with its co-operative ethos, situates the FDC Group as an important provider of agri and financial advice to rural Ireland.

4.2.2 FDC: Profile of Agri-Advisory Services and Expertise

FDC Group services include accounting, taxation, agri-advice consultancy and business advisory services. The range of services are presented in Figure 32 below which is taken from the FDC Group website (www.fdc.ie).

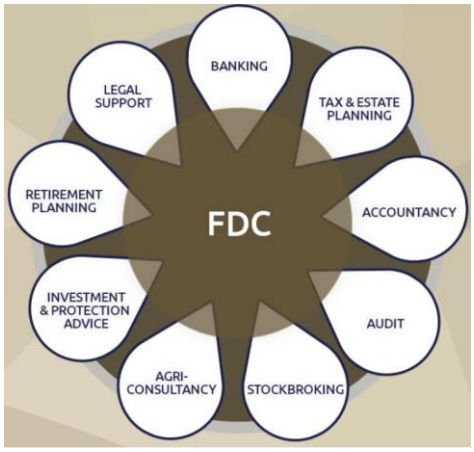


Figure 32: Range of Services offered by the FDC Group (source: FDC Website)

While all the services outlined in Figure 32 above are available to farmers, the FDC Group has a particular division focusing on agri-consultancy which employs eight full-time agri-advisors. A key witness from FDC Group informed the researcher that the client farmer base has expanded in recent years. In the past, the main focus was extensive beef farmers who required help with environmental schemes. However, in recent years the client base has expanded to include intensive dairy farmers who require help on Dairy Compliance Planning. This requires context specific and one-to-one farm advice. Hence, FDC Group provides tailored agri-advisory services to farmers. These are outlined in Table 7 below.

Table 7 FDC Agri-Advisory Services

Agri-Advisory Services	
Banking Facilities Negotiation and Loan Restructuring	• Assistance with loan arrears and restructuring proposals • Vulture Fund negotiations • Assistance with new loan applications
Agri Lending Support Services	• Assistance with new loans for cases less than €300,000 • Specialist assistance with new loans complex cases usually in excess of €300,000 • Specialist assistance with stressed loans including restructuring arrears and debt settlement negotiations
Farm Financial Planning	• Financial Projections
Business Model Advice	• Farm Incorporation • Collaborative Farming Advice • Registered Farm Partnerships
Schemes Advisory	• Basic Payment Scheme • TAMS • GLAS
Carbon Navigator Advisors	• FDC Agri Consultants are trained Carbon Navigator Advisors and are approved to compile and submit appraisals under the Beef Genomics Scheme and other schemes where a Carbon Navigator is required.
Soil/Nutrient Advice	• Derogation application • Periodical Nutrient Management Plan • Soil Sampling

As can be seen from Table 7 above, FDC Group provides tailored agri-advice services in three key areas: finance/banking (agri-lending assistance/negotiation); farm business planning (financial projections, advice on collaborative & partnership models), and environmental services (schemes advisory, carbon navigator advisors and soil sampling and derogation application assistance). All these services are very much related to farm development advisory services. As was seen in the farmer survey, this is a service very much in demand by the next generation of farmers. It would suggest that there is scope for collaboration between FDC and the agricultural co-operatives (dairy and livestock co-operatives). We will come back to a greater discussion of this later in the report.

FDC Group's business model displays a highly augmented service offering. Furthermore, it may be concluded that this augmentation is further strengthened by attributes that are unique to FDC Group itself. For example, within its service portfolio, the *"synergy"* between its supporting and core services and its "*integrated approach"* offers a "one stop shop" for clients' multiple enterprise needs. It is reasonable to assume this would be highly valued by a client. Effectively a client can engage with a single point provider rather than with multiple service providers. Should the services of other firms need to be engaged with, FDC can facilitate and co-ordinate this on a client's behalf. Research indicates that it is common that competitive advantage is gained from the service augmentation and not from the service itself.[78] There is evidence that FDC's business model aligns with this research.[79]

The FDC service is very much integrated with the Irish farming sector. This arises from its local presence and one-to-one service offering. In addition to this, many of the farm accountants in FDC either have an agricultural science qualification or a deep knowledge of farming as the FDC key witness indicates,

> "*most farm accountants started off with agricultural degrees, they wouldn't be accountants to start with, so it was very much the trusted ag advisor became the accountant"*.

FDC Group particularly stresses the role and importance of trust and very much values its relationship with its farmer clients, highlighted as follows by the FDC key witness:

> *"At the center of the FDC Group's model is the client relationship and cultivating the relationship to the benefit of the client. The company ethos is to serve a need that we can deliver on and with this comes a commitment to client value".*

[78] Goffin and Mitchell, p.71, 2010
[79] Ryan-Doyle, 2020

4.2.3 Concluding note

As discussed earlier, the dairy and livestock co-operatives offer a more limited business and financial planning service to their members than the FDC Group. FDC Group's farm specialised business planning service is based on a foundation of accounting and financial expertise backed by agricultural knowledge. This level of specialisation would be very difficult to offer in the agricultural co-operatives. FDC Group's collaboration with the other co-operatives, could help to provide a more tailored service to the members of the livestock and dairy co-operatives. Hence, a collaboration between FDC and the agricultural co-operatives could be worth exploring to the advantage of both parties.

In addition, FDC Group is developing expertise in environmental agri-advice, extending beyond schemes assistance to soil sampling and carbon navigator advice. FDC plan on further increasing their scope in environmental advice and ensure they are at the forefront of EU schemes on the horizon such as demands on forestry and so on. Again, collaboration with the agricultural co-operatives could be an area worth exploring here. One area of possibility could be in the quantification of the Landscape Approach through *Natural Capital Accounting*[80] as the agricultural co-operatives have access to the landscape data and FDC Group has the accounting bedrock to develop *Natural Capital Accounting* (NCA) expertise to collate landscape data and 'measure changes in the stock of natural capital'.[81] This type of collaboration could strengthen the development of a necessary landscape approach in Ireland.

4.3 Irish Farm Accounts Co-operative Ltd (IFAC)

The Irish Farm Accounts Co-operative Ltd (IFAC) was founded in 1975. It originated out of the regional voluntary accounts groups that were set up across the country from the 1960s. IFAC is a farmer owned co-operative with over 19,000 clients. It is run by a board of directors of 18, of which 12 are farmers, 3 are from the IFA, 1 ICOS and 1 FBD.

4.3.1 IFAC: Profile of Agri-Advisory Services and Expertise

IFAC offers primarily financial planning and accounting services to rural communities with a particular focus on farmers and rural businesses where 90% of its clients are farmers. A key witness from IFAC indicated that "IFAC is an accounting company specialising in agriculture". The key services offered are outlined in Table 8 below.

[80] Meijer et al., 2019

[81] (https://ec.europa.eu/environment/nature/capital_accounting/index_en.htm)

Table 8 IFAC Key Services

Services offered	
Tax Planning	Farm structure, tax consultancy, VAT
Everyday Support	Farm management systems
Future Planning	Succession, financial planning
Renewables	Wind, Solar, Anaerobic Digestion.
Software tools for planning • Farm Pro • Cashminder	Software for tracking, planning and budgeting

As can be seen from Table 8, IFAC's key expertise is in financial advice and planning, business structures and data management tools. A key witness from IFAC indicated that IFAC specialises in financial agri-advice and that, for other areas of agri-advice, IFAC directs the farmer to other providers. However, the key witness indicated that IFAC has a particular close relationship with both Teagasc and the Dairy Co-operatives. For example, IFAC jointly organises farm walks for their members with the Dairy Co-operative or Teagasc. It is also actively involved in the Teagasc/Kerry Agribusiness Monitor Farms. IFAC has developed a key skill in the development of data management tools. Two key tools here are *Farm Pro* and *Cashminder.* These software tools help the farmer in tracking, planning and budgeting. One of the IFAC key witnesses indicated that these tools will continue to evolve further for the benefit of the farmers.

IFAC also draws on its data management skills in the production of a range of publications, from market forecasts, sector reviews and guidance documents. This provides a valuable service to both the farmers and the wider agricultural and food sector.

The core function of IFAC to the farming sector is financial agri-advice. A key witness interviewed from IFAC indicated that this '*financial advice is now framed within current and future sustainability requirements'*. Hence, financial agri-advice is central to a transition to sustainable agriculture.

4.3.2 Regional Network of IFAC

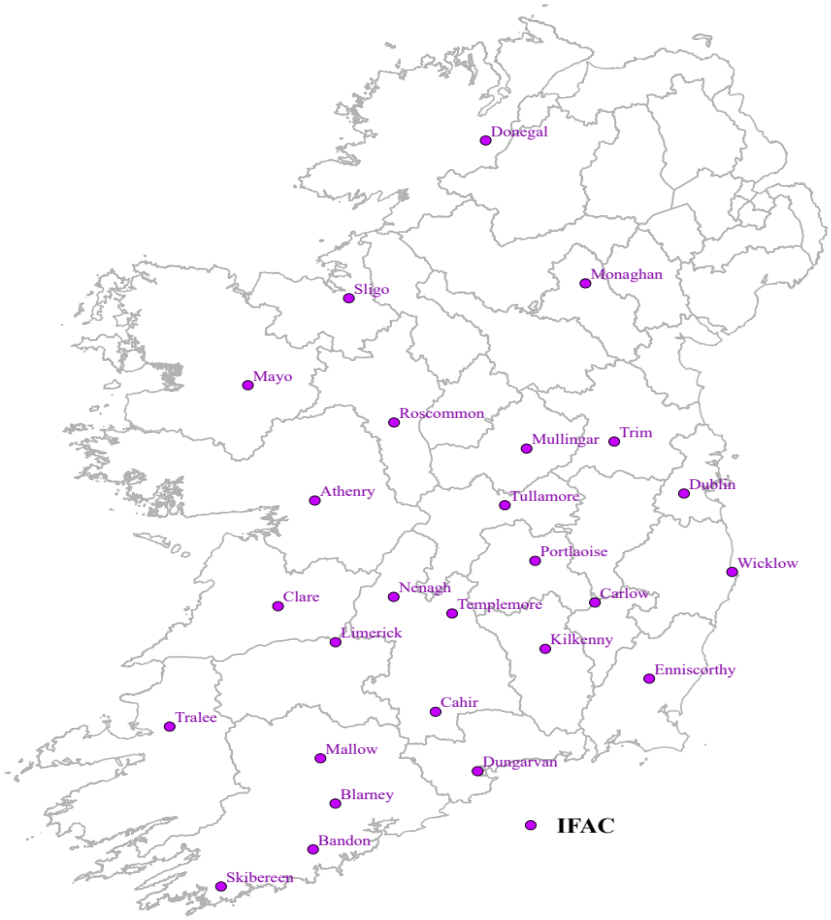


Figure 33: Geographical Spread of IFAC offices
Note: Map produced by Tim Bohan and Noreen Byrne, UCC

IFAC has a strong regional network, particularly in the midlands and further North.

4.3.3 Concluding note

IFAC already has informal and formal collaborative relationships with the dairy co-operatives, livestock co-operatives and Teagasc. Many of the IFAC offices are based in the vicinity of the marts. In relation to dairy co-operatives, IFAC works on joint initiatives with both the dairy co-operatives

and Teagasc. It also has informal collaboration based on personal networks and relationships built over the years.

IFAC also has a particular strength in the management and co-ordination of farm data. It has used this in the development of farm management tools to support the farm business. It has also used this data and their expertise in the development of sector review and market insights reports.[82] This expertise in financial data management and working in collaboration with other key stakeholders could play an important role in the establishment of a landscape-based approach and in the transition to a sustainable agriculture in Ireland.

In addition, as with other finance agri-advice providers, encouraging the farmer to integrate sustainability into their financial thinking and planning is central to transitioning to greater on farm sustainability.

4.4 Farm Relief Services (FRS)

Farm Relief Services (FRS) originated from the voluntary milking relief groups that had been set up across the country. The National FRS was set up in 1980 as a federal co-operative and acted as a national co-ordination and shared services body for these FRS co-ops. The national body has evolved from a federal co-ordination structure to a more centralised management structure for most of the FRS offices. However, there are still a number of independent co-ops which are affiliated to the National FRS and avail of shared services. NFRS is a co-operative which is owned by its farmer members. FRS was supported by the Dairy Co-ops in the 1980s with the establishment of the National Development Fund.

4.4.1 FRS: Profile of Agri-Advisory Services and Expertise

FRS have five distinct divisions namely, farm services, fencing, recruitment, Herdwatch and training. Greater detail of the services under each of these divisions is outlined in Table 9 below.

[82] https://www.ifac.ie/downloads

Table 9: FRS Key Services

Services offered	
Farm Services	Relief milking, general farm labour Specialised Farm Services (*Hoof Care, freeze branding, cow & sheep pregnancy scanning, dehorning, waste plastic collection, weighing*)
Fencing	Agricultural, residential, industrial, sports and so on
Recruitment	Agricultural, food and wider industry
Herdwatch	App developed in 2015 incorporates (compliance, performance, breeds, grass & crops, farm management, reports
Training	Health & Safety, agricultural and horticulture, safe pass, forestry/chainsaw training, construction, soft skills and communication

As can be seen from the table above, FRS offer an extensive farm operational support to farmers, from relief labour to software supports to training. Herdwatch has proved very successful and is operating on 15,000 farms. This app incorporates both farm management and compliance and is noted for its user-friendly platform.

In recent years, NFRS run a successful contract service and have won tenders from both Teagasc and Bord Bia. At one point, NFRS employed more than 100 agri-advisors to run the GLAS programme. Since the completion of the contract, while the number of agri-advisors had greatly reduced, the institutional knowledge of running such large-scale programmes remains. They also run a successful help line for Bord Bia to assist with dairy compliance questions on the SDAS and SDLAS programmes. FRS also offers niche training in the operation and safe use of machinery.

FRS has shown significant innovation over the past 40 years. This is documented in Peter Byrne's anniversary book[83] published in 2021. Some of these innovations are outlined below.

[83] Byrne, Peter (2021) *From Farm Relief Services to FRS Network: The Journey Over 40 Years;* Published by NCFRS. Printed by Walsh Printers, Roscrea. Peter Byrne is a former CEO of NCFRS

Table 10: FRS Innovations

Innovation	Further detail
Hoof Care Service	Up to the time of its introduction "lameness in Ireland was very much a veterinary issue and was mostly treated with antibiotics.
Rubber Shoes for Cows	Partnership between NCFRS and Abbey Rubber
First Sheep and Cow Scanning Services	Ultrasound technology to scan ewes and cows for pregnancy
Freezebranding Service	Very important in terms of herd management
Machinery Ring Pilots	FRS first to introduce this concept in Ireland
Provision of childcare service	Attempted to provide a childcare service to farmers. Ran for 3 years.
Farmers Accident and Sickness Scheme (FASS)	Negotiated first with PMPA and then FBD. Introduced in 1984. In 2012 FASS was phased out by FBD.
Member Benefit Scheme (MBS)	FRS developed their own Member Benefit Scheme in 2012
Waste Farm Plastic Collection Service	Introduced in 1996 and discontinued in 2018/19
Forestry Services	Set up in 1987 for the development of forestry. Still continuing but at a reduced rate
Safe Tractor Driving Skills Course	Set up in the early 1990s to increase farm safety
FRS Disinfection Service	Set up in response to Foot and Mouth outbreak in 2001

Many of these innovations involved detailed research and travel abroad. The innovations were then adapted for use in Ireland.

4.4.2 FRS: Regional Network

FRS has a network of offices nationwide with 20,000 customers.

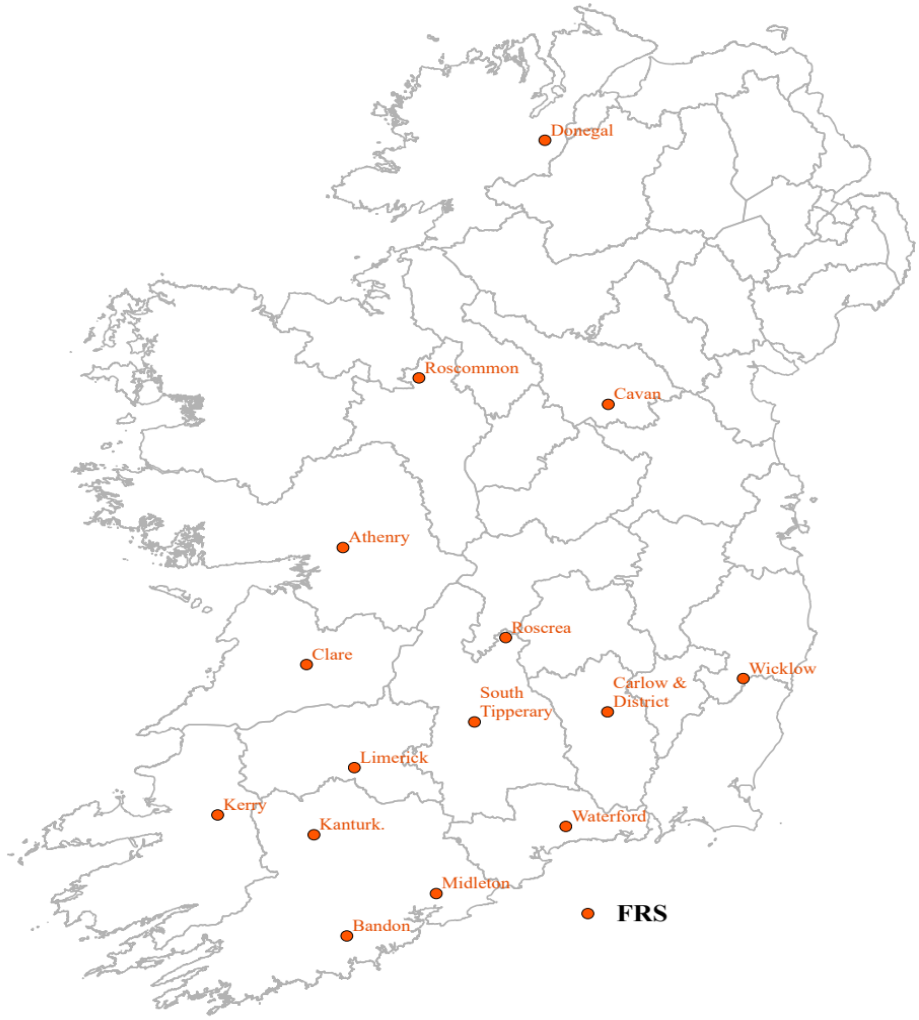


Figure 34: Geographical Spread of FRS Offices
Note: Map produced by Tim Bohan and Noreen Byrne, UCC.

4.4.3 Concluding note

FRS has a particular strength in supporting the operational functioning on farms. It does this through labour, software tools and training. It also works in close partnership with its farmer members. This operational expertise, which is both tailored and based on embedded relationships, will be fundamental to a transition to sustainable agriculture. In addition, the regionally embedded nature of FRS makes it a key stakeholder in any landscape-based approach in that transition.

4.5 Cultivate Credit Union Farm Finance

Cultivate first originated with a group of credit unions in Galway in 2016. After extensive discussions with farming stakeholders (IFA, Teagasc, Farmers, IFAC, Livestock Marts) and credit union staff taking a tailored 'Farm and Finance' training course in Mountbellow Agricultural College, four credit unions started to offer agri-loans. This group of four has now expanded to forty-seven credit unions across the country with further plans of expansion. The national Cultivate organisation is owned and run by its credit union members.

The combined asset size of credit unions participating in Cultivate Credit Union Farm Finance is almost €6 billion. The combined common bond areas make up almost 50% of farmers in the country. Over €50 million in Cultivate loans have been issued to Irish farmers.

4.5.1 Cultivate Credit Union: Profile of Services

The main service offered by Cultivate Credit Union is agri-loans. The loan amounts are up to €50,000 for any farm purpose. The loans are unsecured lending with an interest rate of 6.5% (6.75% APR). The loan term is up to seven years. The credit union staff have carried out tailored training in farm finance, with some have also completing a green cert to enhance their agricultural knowledge. Some of the general loan purposes are outlined in Table 11 below.

Table 11: General Purposes of Cultivate Credit Union Farm Finance

Agri-Loan general purposes
Invest in new or second hand machinery
Upgrade your buildings and facilities
Purchase additional livestock
Obtain working capital
Increase cashflow

These type of agri-loans could play a very important role for farmers who are investing in sustainability and compliance improvements on their farms.

4.5.2 Cultivate Credit Union: Regional Network

Cultivate loans are offered across 47 credit unions in Ireland. The locations are presented in Figure 35 below.

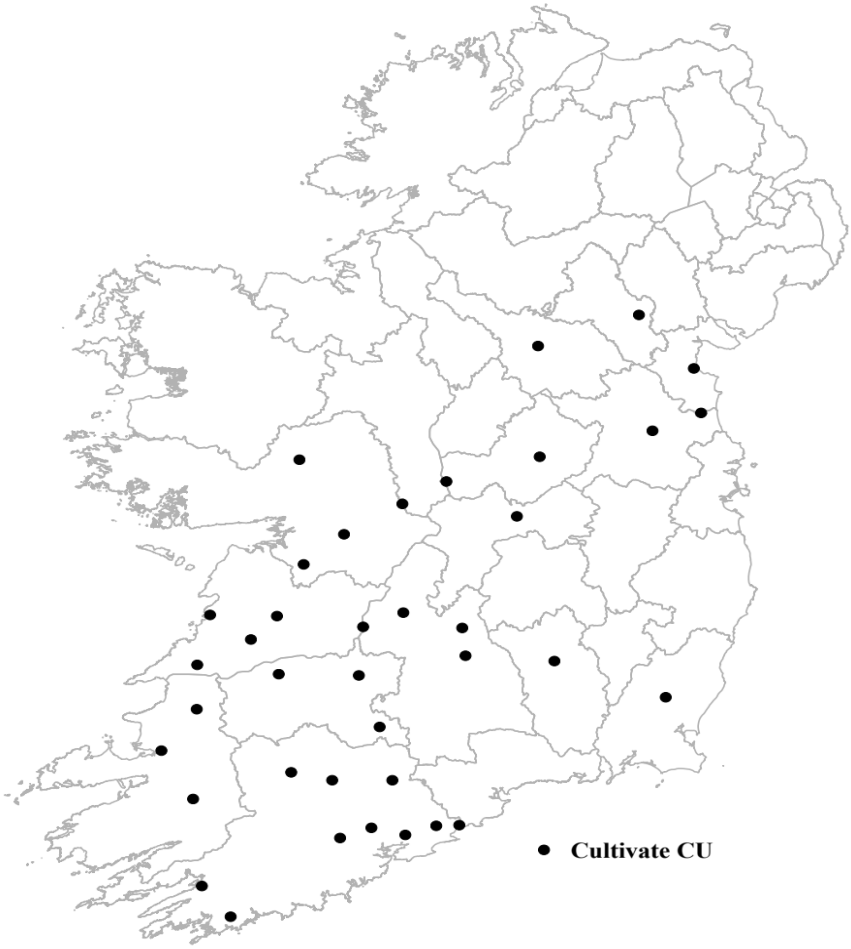


Figure 35: Geographical Spread of Credit Unions offering Cultivate Agri-Loans
Note: Map produced by Tim Bohan and Noreen Byrne, UCC.

The map above shows 40 of the 47 credit unions offering Cultivate agri-loans. Seven new credit unions joined the scheme after the production of the map. It should also be noted that the map only displays the main offices and does not include the many sub-offices connected with these credit unions. Prior to any of these credit unions offering agri-loans, they must form a stakeholder group of agri stakeholders such as the IFA, Livestock Marts, Teagasc and so on in the particular community. A key witness from Cultivate Credit Union indicated that,

"Identifying and engaging with key stakeholders was critical to the success of the project"

The credit union staff must also engage in agri-related training. This embedded stakeholder model is very applicable for the development of a landscape-based approach and has huge potential for further development.

4.5.3 Concluding note

CU Cultivate is an excellent model of collaboration bringing many of the key agri-players together in a place-based context. In addition, it provides access to finance. Two key barriers to the development of landscape-based approaches are stakeholder engagement and access to finance.[84] Hence any efforts to develop a landscape-based approach in Ireland should incorporate Cultivate Credit Unions as important stakeholders.

4.6 Conclusion

This section has outlined a profile of other co-operatives (FDC, IFAC, FRS, Cultivate Credit Unions) which have either a direct or supporting role in the provision of agri-advice. All of these co-operatives are place-based with a network across Ireland. This would seem to be an important institutional infrastructure from which to further develop agri-advice provision in Ireland, particularly within a landscape-based framework.

[84] Vermunt, D.A., Verweij, P.A. and Verburg, R.W., 2020.

Section 5: Conclusions and Future Directions

The purpose of this research study was to explore the role of agricultural co-operatives (dairy and livestock co-operatives) in the agri-advisory space. We also explored the role of other co-operatives such as FDC, IFAC, FRS and Cultivate Credit Unions. The study found that the agricultural co-ops and these other co-operatives contribute to Irish AKIS in several important ways as outlined below:

1) Agricultural co-ops offer a range of embedded and tailored/contextualised knowledge, and advisory services and expertise to members via in-house and partnership delivery models and programmes.

2) As discussed in Section One, the agri advisory literature highlights the need for participatory advisory strategies (especially as situational complexity increases). The study findings suggest that participatory advisory strategies are a strong feature of agricultural co-operatives' interactions with members, particularly in dairy co-ops.

3) As discussed in Section One, the AKIS model places a strong emphasis on mutual learning between various actors and a collective contribution to knowledge and innovation. The embeddedness of agricultural co-operatives in the members' socio-economic context enhances the potential for mutual learning and collective localised contributions to knowledge and innovation. Therefore, agricultural co-operatives are well suited to facilitate a landscape-based approach to agri-advice.

4) It is suggested that, as co-operative owners are also the members who use the services, agricultural co-operatives can, through the services provided, create innovative programmes of action to encourage farmers to modify their practices.[85] The study findings highlighted examples of such innovation incentives within agricultural co-operatives.

Also, whilst not the specific focus of this study, the principle of education and training of members within the co-operative model suggests the presence of education and training services alongside advisory services within the agricultural co-operatives. This suggests that agricultural co-operatives have the potential to offer services aligned with more than one of the AKIS pillars, thus creating service benefits.

These aspects, further discussed in the findings section, do not appear to be comprehensively captured in agri-advisory published literature and reports. Taking them into account suggests the role played by co-operatives in Ireland's agri advisory system is potentially stronger than may be assumed and, relative to their reach (87,433 members), somewhat underdiscussed. New requirements for the agricultural sector will create new needs for agri advice provision within agri-advice services governance structures.

[85] Candemir, A., Duvaleix, S. and Latruffe, L., 2021..

To satisfy these needs, a clear understanding of the prospective contributions from all AKIS actors is pivotal. Indications of future needs for agri-advisory services are discussed next.

Based on the survey response data, we propose that strategies that facilitate collaboration beyond organisational boundaries have the potential to enhance innovative performance since developing innovative services is often likely to require additional capabilities and resources difficult for one organisation to obtain. Therefore, considering that agri-advisory services are a key information source for farmers, building an agri-advisory services portfolio that is collaboratively structured with the right mix of expertise/skills and co-ordination can enhance innovative performance and services and offer high shared value to members. Within co-operative organisations, this is especially relevant in the context of their farmer reach and thus potential for collective action. In this context, limited collaborations would seem to be a missed opportunity for co-ops.

By establishing a culture of service innovation, the agricultural co-operative sector, with its reach and positioning at the most local level of the service relationship, can, as a provider of agri-advice, strengthen overall outcomes in a manner that creates high shared value for members. It could be argued that without the co-ordinating structure of the co-op, the ability of farmers to engage with and access services via other channels may not be cost efficient. The agricultural co-operatives offer the potential to design innovative service strategies and services in a manner that addresses members' needs. In the context of the AKIS and transformation agendas for agriculture discussed in chapter one, the principles of the co-op business model highlight the potential for agricultural co-operatives to play a strategic role in the AKIS and implementation of the future farm development agenda. Furthermore, the embeddedness of agricultural co-operatives in the socio-economic life of its members enhances the potential for mutual learning and collective localised contributions to knowledge and innovation.

Possible way forward

As outlined above, agricultural co-operatives and the other co-operatives outlined in this report have a significant role to play in the current provision of agri-advice. However, this role could become further enhanced as co-operatives have the potential to play a central role in the transition to sustainable agriculture in Ireland. Agri-advice is key in this transition process. To play this bigger role requires a shift in orientation away from a sales-dominant approach and drawing on key strengths within agricultural co-operatives.

Firstly, in terms of orientation, to date Irish co-operative agri-advice has had a strong focus on the sales of inputs. The input market is changing. Due to environmental regulation and increasing costs, farmers are looking to reduce inputs on their farms. This situation is likely to continue. Hence, input providers and agricultural co-operatives will need to adapt to this new context. Therefore, the need for context specific agri-advice has never been stronger. There is a significant gap in this space in Ireland and we believe agricultural co-operatives could be well placed to meet this need. However, a shift in orientation away from a predominant input sales approach is required along with the development and provision of expertise in context-specific agri-advice. This will require the development of such expertise as well as the extensive use of geographical and farm specific data.

Secondly, to play an extended role in the provision of agri-advice, co-operatives need to draw on their particular strengths. Such strengths include their trusted relationship with their farmer members, their embeddedness within landscapes and community, their access to geographical and farm-specific data and their ability to collaborate with other key stakeholders. These strengths are highlighted when we look at the spread and embeddedness of agricultural and other related co-operatives across the country. This is depicted well in Figure 36 below. The base of the map is divided into the Water Framework Directive Catchment Areas.

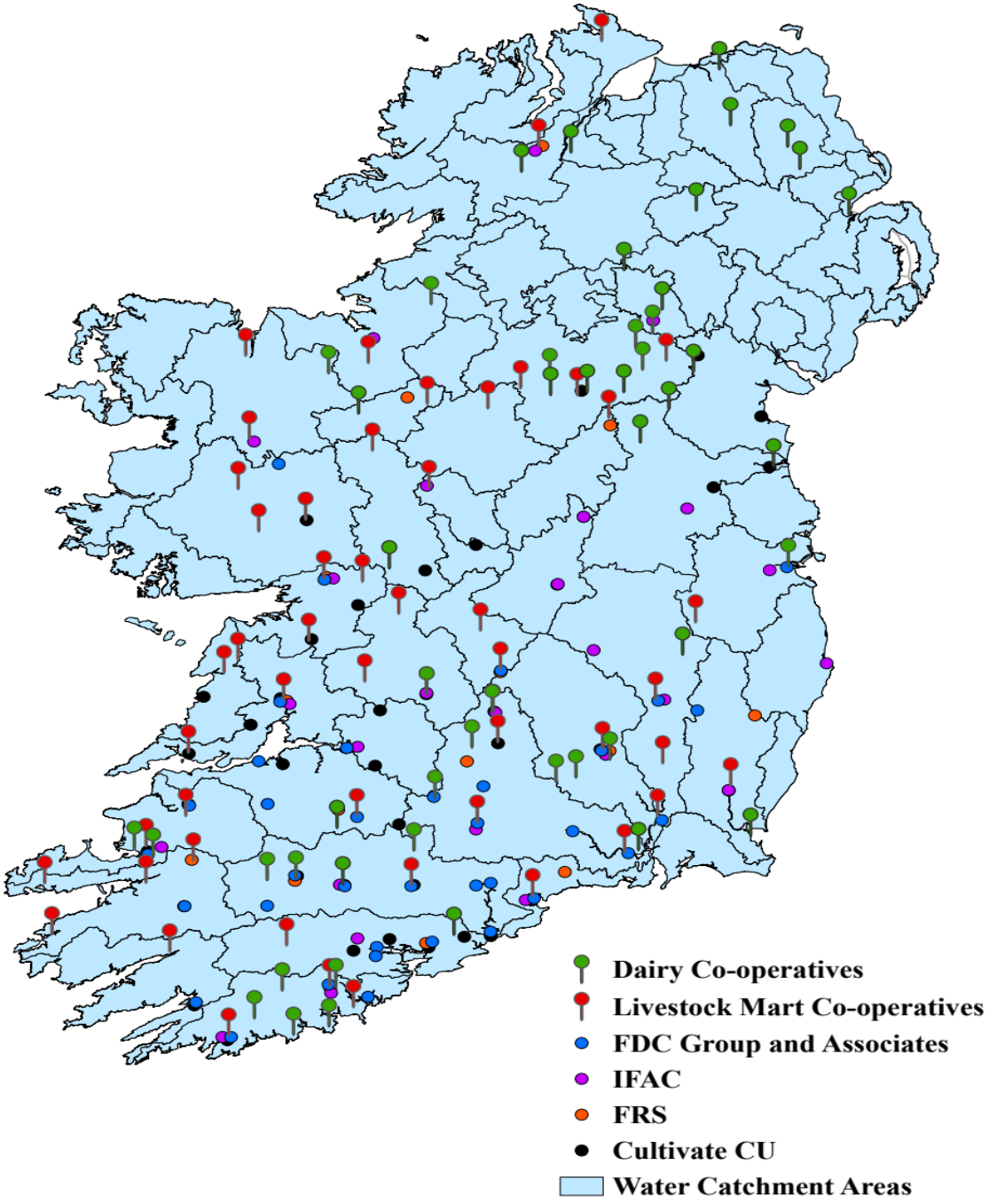


Figure 36: Geographical Distribution of Agri-based Co-operatives and Water Framework Directive Catchment Areas
Note: Map produced by Tim Bohan and Noreen Byrne, UCC.

The embedded and networked nature of co-operatives in Ireland is particularly important for the development of a landscape-based approach. This would be difficult for many other agri-advice providers. The Water Directive Framework Catchment areas could be very useful framework to develop a landscape-based approach to agri-advice that incorporates water, soil, biodiversity. As can be seen from Figure 36, there are co-operatives present in almost all of the catchment areas. This allows for a

collaborative and contextualised response to agri-advice and is worthy of further exploration and research.

Co-operatives have the expertise, the link with farmers and context-specific data, landscape and community embeddedness and the ability to collaborate with other key stakeholders to develop an extended agricultural advice model which will guide Irish farmers in transitioning towards economic, social and environmentally sustainable farming in Ireland. With much of this infrastructure already in place, they have the ability to develop agri-advice that farmers need and will demand into the future. With the necessary shift in orientation and drawing on the co-operative strengths, this will allow for the development of a new business model for agri-advice within the agricultural co-operatives.

Recommendations

The key overall recommendations from the research are

1. Agri-advice offered by agricultural co-operatives will be central in the transitioning to enhancing the sustainability of Irish agriculture. Greater acknowledgement of this role is required. Position the co-operative movement to give it a greater voice in the agri-advice space. Currently, the historical and contemporary role of co-operatives as agri-advice providers has only very limited recognition. This has consequences in terms of policy, future funding, co-op relevancy for farmer members and the development of the agri-advice business model in co-operatives.
    a) Strategically communicate on the current role and contribution of co-operatives to AKIS in Ireland.
    b) Develop a strategic position in terms of future contribution to agri-advice at an individual co-operative and sectoral level. Enhance the position through research, strategic communications and media, lobbying avenues and through farmer members.

2. Co-operatives have key strengths in the provision of relevant agri-advice, such as a long historical record in this space, trust of the farmers, access to farmers and farm-level data, being landscape-based and having strong relationships with other stakeholders and co-operatives. Few other providers have these key strengths.

    a) Identify the key strengths as a sector and within individual co-operatives
    b) Develop an agri-advice business model based on these key strengths

3. Development of a more integrated agri-advice service:
   Shift from a sales-dominant to a more integrated orientation in agri-advice (sales, farm development, environmental - emissions and wider biodiversity) agri-advisory offering. This will ensure the relevancy of the agricultural co-operative and allow for the development of a new agri-advice business model in the co-operatives. A focus on sales of inputs alone will become a less profitable income stream going forward, as the prices of such inputs continue to increase and regulation introduces restrictions on their use, farmers will be looking for alternatives.
   a) Create some separation between the agri-advice and sales of inputs function in co-operatives
   b) Create greater linkages between the sustainability and agri-advice teams
   c) Give consideration to how to manage the conflicts of interest between environmental advice and sales of inputs advice (possibly a separation of roles could facilitate this)
   d) Develop performance metrics for agri-advice staff (other than sales)
   e) Consider the development of a business model which supports a more integrated agri-advice offering. Advice which is based on profit rather than yield per hectare on the farm may support this re-orientation and allow for the emergence of a new business model to support agri-advice.

4. Assign greater resources to the agri-advice function in co-operatives:

   a) Co-operatives should consider increased resourcing of this function in terms of personnel and training. While this will involve increased costs in the short to medium term, it will set the foundation for the enhanced relevancy of co-operatives into the future.

5. Further enhancement of farm development agri-advice to farmers (This is something farmers need and are looking for, especially younger farmers). The co-ops' access to farmers and farm-level data could allow for the development of an efficient and effective business model for the delivery of this type of advice. This could offer an income stream as well as enhance the relevancy of the co-op for the younger farmer.
   a) Greater offering of farm development and environmental services to

farmers either within the co-operative or through collaboration with other providers.

b) Research business models for the delivery of enhancing this type of advice.

6. Facilitate on-farm experimentation as part of the agri-advice model. On-farm experimentation is seen as an essential element of agri-advice and the transition to enhanced sustainability in the future (Bijman et al, 2023) and is a key part of the EIP and COOPERATION programmes. Co-operatives are better placed than other agri-advice providers to enable such experimentation.

7. Enhance environmental and nature-based skills within the agri-advice team:
    a) Dairy: Consider hiring an ecologist in-house or as a consultant
    b) Development of environmental and ecological skills within the agri-advice team

8. Give greater consideration to next-generation farmers in the agri-advice offering. Agri-advice is a key relationship bridge to the younger farmer and is central to the maintenance of co-operative relevancy.

    a) Research this group of farmers and their needs to develop an agri-advice response that is tailored to these needs (As younger farmers are not well represented on co-op boards and committees, agri-advice could be a relationship connection to this group of farmers).
    b) Consider delivery channels such as discussion groups, WhatsApp groups, use of technology and other platforms to encourage knowledge exchange between different generations of farmers and so on. This allows for the further development of peer-to-peer learning in the co-operatives.

9. Enhance external collaborations as part of the delivery model for agri-advice
    a) Dairy and Livestock Co-operatives: Continue to enhance external collaborations, as such collaborations seem to increase the level of expertise in the co-operatives and encourage farm development and environmental services.
    b) Consideration of strategic collaborations between co-operatives for the

enhancement of farm development agri-advice services to members in the dairy and livestock co-operatives. Such collaboration would enhance the development of the business model, in terms of income stream and service.

10. Enhance the use of data as part of the agri-advice function. Agricultural co-operatives have a particular advantage here in terms of their access to data.
    a) Both Dairy and Livestock Co-operatives have significant access to data on an individual farm and landscape base. This could be used for the creation of farm development support and advice services and to enable soil and biodiversity mapping on a landscape basis.
    b) Collaborate with entities which have developed landscape biodiversity mapping platforms. BRIDE/Farming for Nature is one such entity.

11. 'Think landscape' in the modelling of the agri-advice function:
    a) Co-operatives tend to be geographically embedded entities. There is a unique opportunity for co-operatives to be leaders in a landscape approach to agri-advice and agricultural development for greater impact.
    b) Creation of stakeholder groups within the Water Directive Framework Catchment areas to enable collaboration on the development of a landscape-based approach to the provision of agri-advice

12. Enable local farmer-led environmental initiatives as part of the agri-advice function. Co-operatives are well placed to enable such initiatives and could perhaps be seen as conduits for funding:
    a) Research the feasibility of the Dutch Co-operative Payment Model for an Irish context.
    b) Co-operatives could have a role to play in the Agri-Environment Climate Measure (AECM) and Co-operation Projects (CPs) under Pillar 11 of the New CAP, coming into effect from 2023.
    c) Food Vision 2030 has called on co-operatives and private operators to replicate models such as ASSAP and EIPs across a range of environmental areas and to come forward with proposals in this regard.

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Appendix 1

Dairy Co-operative Survey

1. Which of the following would you consider as areas of agri-advisory provided by your co-op? Potential areas are listed below. Please select all that apply. Should you wish to list additional ones, please list under the additional option.
    - ☐ Milk Advisory – Yield/Quality
    - ☐ FAS Schemes- Advice/Applications
    - ☐ Farm level efficiency/productivity practices. Specific examples of related programmes or topics can be mentioned here_____
    - ☐ Farm level conservation/environmental practices. Specific examples of related programs or topics can be mentioned here _____
    - ☐ Young Farmers. Specific examples of young framer related programmes or topics can be listed here_____
    - ☐ Farm Health and Safety
    - ☐ Animal Nutrition
    - ☐ Animal Health
    - ☐ Farm Supplies/Inputs
    - ☐ Farm Level Assessment & Action Planning
    - ☐ Data Recording – specific examples of these services can be listed here_____
    - ☐ Data Analysis and Reporting. Specific examples of these services can be listed here___
    - ☐ Marketing Trends
    - ☐ Farm Business Planning
    - ☐ Farm Financial Planning
    - ☐ Origin Green Programme
    - ☐ SDAS
    - ☐ None of the above apply
    - ☐ Other/Additional, Please comment here_____

2. Are there any unique farm-based initiatives/programs the co-op is currently engaging in or planning to engage in?
    - ☐ Yes
    - ☐ Specific examples can be listed here_____
3. How is Agri-Advisory structured at the Co-op?
   Potential options are listed below. Please select all that apply. Should you wish to list anything additional, please list under the additional option.
   <u>Collaboration/partnership with</u>
    - ☐ Other Co-ops
    - ☐ Teagasc
    - ☐ Board Bia
    - ☐ Private advisors

   Other partners for example
    - ☐ Colleges/Universities
    - ☐ Dairy Sustainability Ireland
    - ☐ EPA
    - ☐ Local authorities
    - ☐ None of the above apply
    - ☐ Other/additional, Please comment below _____

4. What are the main expertise areas of advisory personnel at the co-op? Potential expertise areas are listed below. Please select all that apply. Should you wish to list anything additional, please list under the additional option.

   - ☐ Dairy
   - ☐ Beef
   - ☐ Sheep
   - ☐ Tillage
   - ☐ Piggery
   - ☐ Agronomy
   - ☐ Animal Health
   - ☐ Animal Nutrition
   - ☐ Soil Fertility
   - ☐ Emissions
   - ☐ Water quality
   - ☐ Waste Management
   - ☐ Biodiversity
   - ☐ ASSAP Advisor
   - ☐ Farm Technologies/Ag-Tech
   - ☐ Marketing
   - ☐ Business Development
   - ☐ Agri-sales
   - ☐ None of the above apply
   - ☐ Other/additional, Please comment below _____

5. Is there a farm services advisory/extension team at the co-op?
   - ☐ Yes
   - ☐ No
6. How many personnel does the farm advisory/extension team have?
   - ☐ 1
   - ☐ Between 2-4
   - ☐ Between 5-7
   - ☐ 8 plus
   - ☐ Prefer not to say
7. Which channels does the co-op utilise to provide advice? Potential channels are listed below. Please select all that apply. Should you wish to add additional please list under the additional option
   - ☐ One to One
   - ☐ Farm Demos
   - ☐ Workshops
   - ☐ Seminars/conferences
   - ☐ Public Meetings
   - ☐ Group Sessions/Discussion Groups
   - ☐ Farm Walks/Visits

- ☐ Telephone
- ☐ Text
- ☐ Newsletters
- ☐ Publications
- ☐ Radio
- ☐ Performance Reports e.g. Milk Statements
- ☐ Online Service/record keeping platforms
- ☐ Website
- ☐ Mobile apps
- ☐ Social Platforms
- ☐ Other/additional, Please comment below

8. In your opinion, of the channels you selected above what would be the top 3 utilised by the co-op in providing advice? In the space provided, please list a top 3
    a) _____
    b) _____
    c) _____

9. What are some of the key issues/questions farmer members seek advice on via their co-op to assist them in their decision making_____
10. Other Comments: If you have any further comments on the topic of agri-advisory services provided by your co-op, please comment here _____

Thank you for taking the time to participate in this survey. Would you be willing to participate in a short follow up interview to discuss potential future service opportunities for marts?

- ☐ Yes
- ☐ No
- ☐ Possibly

Appendix 2

Livestock Co-operative

1. Which of the following options would you consider as services and expertise offered by your mart to its farmer members? Potential options are listed below. Please select all that apply. Should you wish to list additional ones, please list undr the additional option.

   Livestock Auction Sales

   - ☐ Live
   - ☐ Online
   - ☐ A mix of both
   - ☐ Livestock Catalogues/listings
   - ☐ Transaction brokering/negotiation

   Weigh & Payment Services

   - ☐ Weigh only
   - ☐ Weigh & Pay
   - ☐ Mixture of both
   - ☐ Herd Management Planning/Performance e.g Animal health and nutrition
   - ☐ Livestock Price & Performance Data – Recording/Tracking
   - ☐ Electronic Trading Screens
   - ☐ Mart Reports
   - ☐ Events
   - ☐ Newsletters
   - ☐ Media Publications
   - ☐ Industry Knowledge
   - ☐ Seasonal Knowledge
   - ☐ Specialised Breeds Knowledge/Expertise
   - ☐ Industry/Sector Analysis and Reporting
   - ☐ DAFM Schemes/Supports
   - ☐ In-house Technical Expertise/Knowledge
   - ☐ None of the above apply
   - ☐ Other/additional, please list here_____

2. Are there any services offered by your mart that are of particular interest to young farmers/new entrants?
   i. Yes
   ii. Not Applicable
   iii. Specific examples can be listed or commented here_____

3. What are the main categories of livestock transacted through your mart? Potential categories are listed below, Please select all that apply or indicate not applicable

	0	10	20	30	40	50	60	70	80	90	100	n/a
Cows-Dairy												
Calves-Dairy												
Cows-Beef												
Weanlings-Beef												
Sheep/Lambs												
Pigs												
Special Pedigree												
Other												

4. Is your Mart involved in any collaborations/partnerships in the delivery of its services and/or livestock industry/mart related topics. Potential examples are listed below. Please select all that apply or N/a if not applicable to your mart.

☐ N/A not applicable

Collaboration/partnerships with

☐ Other co-operative marts
☐ Teagasc
☐ Colleges/Universities
☐ Private Marts
☐ Board Bia
☐ Breed Societies
☐ None of the above listed
☐ Other/additional, Please comment here_____

5. What are the main expertise areas of your Marts Personnel? Potential expertise are listed below. Please select all that apply. Should you wish to list additional ones, please list under the additional option

☐ Diary
☐ Beef
☐ Sheep
☐ Pigs
☐ Animal Health
☐ Animal Nutrition
☐ Technology/Ag-Tech
☐ Marketing
☐ Business Development
☐ None of the above
☐ Other/Additional, please comment here_____

6. Which channels does the co-op utilise to facilitate knowledge and information exchange with farmers? Potential channels are listed below. Please select all that apply. Should you wish to list additional ones, please list under the additional option.

☐ Website
☐ Auctions live/online
☐ One to one

- ☐ Seminars/Conferences
- ☐ Public Meetings
- ☐ Group Sessions/Discussion Groups
- ☐ Farm Walks/Visits
- ☐ Telephone
- ☐ Text
- ☐ Newsletters
- ☐ Publications
- ☐ Local Radio
- ☐ Mart Repots
- ☐ AGM
- ☐ Online service/record keeping platforms
- ☐ Online auction sales
- ☐ Mobile apps
- ☐ Podcasts
- ☐ Social online platforms
- ☐ Other/additional online, please list here_____
- ☐ None of the above
- ☐ Other/additional, please comment below_____

7. In your opinion, of the channels selected above, what would be the top 3 utilised by your mart? In the space provided, please list a top 3
    i. _____
    ii. _____
    iii. _____
8. What are some of the key issues/questions farmer members seek advice on via their Mart to assist them with their decision making? _____
9. Other comments: If you have any further comments on the topic of services provided by your mart, please comment in here_____

Thank you for taking the time to participate in this survey. Would you be willing to participate in a short follow up interview to discuss potential future service opportunities for marts?

- ☐ Yes
- ☐ No
- ☐ Possibly

Appendix 3

Younger Farmer Survey

1. What type(s) of farm enterprise are you or your family involved in? Tick all that are relevant
   - ☐ Dairy
   - ☐ Beef
   - ☐ Grain
   - ☐ Horticulture
   - ☐ Poultry
   - ☐ Pig
   - ☐ Other
2. What is the nature of your family's farm
   - ☐ Conventional – Intensive
   - ☐ Conventional – non-intensive
   - ☐ Organic
   - ☐ Regenerative
   - ☐ Other
3. How positive are you about the future of your/your family's farm
   - ☐ Extremely positive
   - ☐ Moderately positive
   - ☐ Slightly positive
   - ☐ Neither positive nor negative
   - ☐ Slightly negative
   - ☐ Moderately negative
   - ☐ Extremely negative
4. Thinking about the development of your farm, how likely are you (or your family farm) to engage in the following;

	Not likely	Maybe	Very likely
• Increase cow herd	O	O	O
• Decrease cow herd	O	O	O
• Diversity in value added on farm	O	O	O
• Increase bio-diversity on farm	O	O	O
• Technical measures to reduce emissions	O	O	O
• Convert to organic	O	O	O
• Convert to some of farm to regenerative	O	O	O
• Diversify into other farm enterprise(beef.	O	O	O

5. Thinking about the everyday operations and future development of the farm, what do you think are the key sources of information, knowledge that are required?

	Not really						Very much needed
• Water quality/run-off advice	1	2	3	4	5	6	7
• Schemes Advice	1	2	3	4	5	6	7
• Animal Nutrition	1	2	3	4	5	6	7
• Animal feed advice	1	2	3	4	5	6	7
• Farm profit monitoring	1	2	3	4	5	6	7
• Long term financial advice	1	2	3	4	5	6	7

• Increasing biodiversity on farm	1	2	3	4	5	6	7
• Reducing emissions	1	2	3	4	5	6	7
• Collaborative farm structures	1	2	3	4	5	6	7
• Regenerative farming practices	1	2	3	4	5	6	7
• Grassland management	1	2	3	4	5	6	7
• Mixed Swarths	1	2	3	4	5	6	7
• Herd Watch	1	2	3	4	5	6	7
• EBI	1	2	3	4	5	6	7
• Milk Recording	1	2	3	4	5	6	7
• Milk Quality	1	2	3	4	5	6	7
• Advice/supply of farm inputs	1	2	3	4	5	6	7
• Farm level assessment	1	2	3	4	5	6	7
• Conservation/environmental?	1	2	3	4	5	6	7
• Efficiency/Productivity	1	2	3	4	5	6	7

6. To what extent do you (or your family) use the following for advice on the farm? Please indicate on sliding scale below

	Don't really use			Moderately use			Use to a great extent
• Teagasc advisors	1	2	3	4	5	6	7
• Private advisors	1	2	3	4	5	6	7
• Co-op	1	2	3	4	5	6	7
• Neighbouring farmers	1	2	3	4	5	6	7
• Discussion Group	1	2	3	4	5	6	7
• Other farmers	1	2	3	4	5	6	7

7. What type of services if any do you avail of from Teagasc? _____

8. What type of services, if any, do you avail of from Private Advisors? _____

9. What type of services, if any, do you avail of from the Dairy Co-op? _____

10. To what extent are you happy with the advice you receive from the following sources?

	Extremely unhappy						Extremely happy
• Teagasc	1	2	3	4	5	6	7
• Private	1	2	3	4	5	6	7
• Co-ops	1	2	3	4	5	6	7

11. What aspect of the farm development advice are you most happy with from the co-op?
_____
12. What aspect of the farm development advice are you least happy with from the co-op? _____
13. How do you think the co-operative could enhance its advice services? What would you like to see the co-op offering to help the develop of your farm? _____
14. I consider agricultural co-ops relevant to my future in farming?
    - ☐ Strongly agree
    - ☐ Agree
    - ☐ Somewhat agree
    - ☐ Neither agree nor disagree
    - ☐ Somewhat disagree
    - ☐ Disagree
    - ☐ Strongly disagree
15. Agricultural co-ops are important for the future of Irish farming?

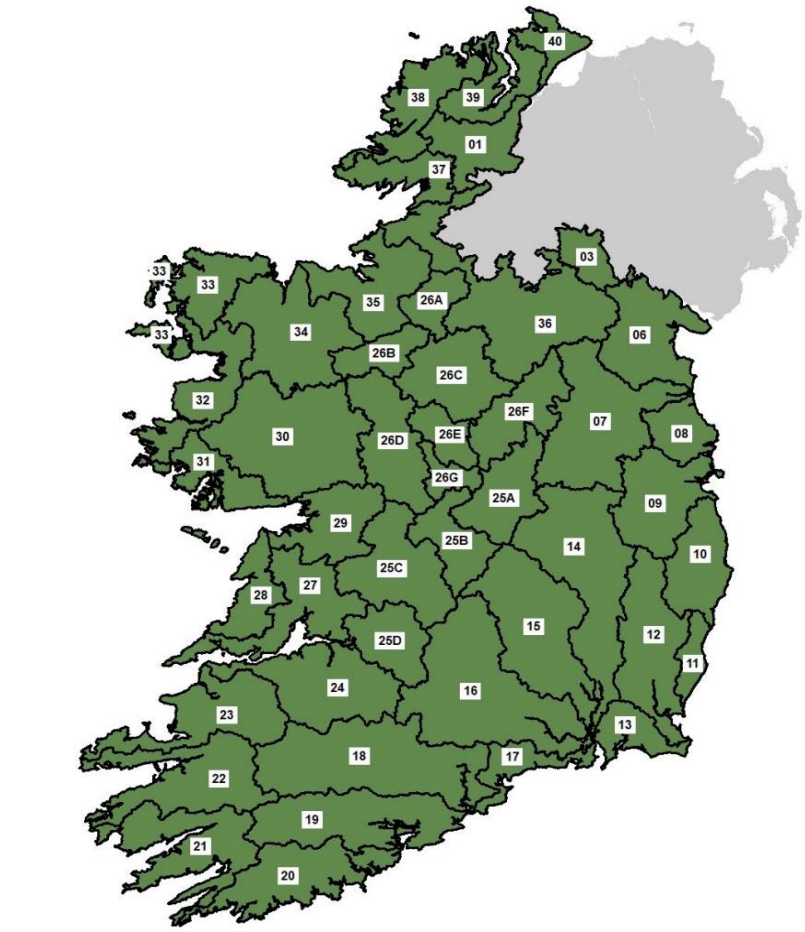
    ☐ Strongly agree

- ☐ Agree
- ☐ Somewhat agree
- ☐ Neither agree non disagree
- ☐ Somewhat disagree
- ☐ Disagree
- ☐ Strongly disagree

16. Are you involved in the board or any committees in your co-operative?
    - ☐ Yes
    - ☐ No
17. What would encourage you to become more involved in your co-operative? _____
18. Gender _____
19. Age_____
20. Any other comments_____

Appendix 4

Water Framework Directive Catchments



Catchment No.	Catcment Name	Catchment No.	Catcment Name	Catchment No.	Catcment Name
01	Foyle	20	Bandon-Ilen	26G	Upper Shannon
03	Lough Neagh & Lower Bann	21	Dunmanus-Bantry-Kenmare	27	Shannon Estuary North
06	Newry, Fane, Glyde and Dee	22	Laune-Maine-Dingle Bay	28	Mal Bay
07	Boyne	23	Tralee Bay-Feale	29	Galway Bay South East
08	Nanny-Delvin	24	Shannon Estuary South	30	Corrib
09	Liffey and Dublin Bay	25A	Lower Shannon	31	Galway Bay North
10	Ovoca-Vartry	25B	Lower Shannon	32	Erriff-Clew Bay
11	Owenavorragh	25C	Lower Shannon	33	Blacksod-Broadhaven
12	Slaney & Wexford Harbour	25D	Lower Shannon	34	Moy & Killala Bay
13	Ballyteigue-Bannow	26A	Upper Shannon	35	Sligo Bay & Drowse
14	Barrow	26B	Upper Shannon	36	Erne
15	Nore	26C	Upper Shannon	37	Donegal Bay North
16	Suir	26D	Upper Shannon	38	Gweebarra-Sheephaven
17	Colligan-Mahon	26E	Upper Shannon	39	Lough Swilly
18	Blackwater (Munster)	26F	Upper Shannon	40	Donagh-Moville
19	Lee, Cork Harbour and Youghal Bay				

N

0 15 30 60 Km

Data Source: EPA /OSi
Date: 20/05/2021

Catchment Boundaries


Golden Jubilee Trust


ucc
Coláiste na hOllscoile Corcaigh, Éire
University College Cork, Ireland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