

Project number: 6090
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Technology adoption among new entrant dairy farmers



Key external stakeholders:

Dairy, beef, sheep and tillage farmers
Department of Agriculture, Food and the Marine
Milk processors
Agri-consultants
Financial institutions

Practical implications for stakeholders:

- This study has provided an opportunity to profile a unique group of farmers, and gain insight into a potential post-quota dairy industry in Ireland. The collaboration of various research backgrounds in this multi-disciplinary study has allowed for an in-depth evaluation of the financial, technical, physical and psychological aspects of setting up a dairy farm.
- The profile of the new entrant farmers informs extension, research and policy agents of the profile of farmers entering the industry, quantifies the physical and human capital resources these farmers have available to them and, most importantly, enables the industry to discover what resources are required to service this group of farmers. Through this profile, the industry is now more informed of the key regions where expansion is likely to occur which can assist milk processors, and identify requirements for training and support post EU milk quota.
- This research helped identify the key financial pitfalls in setting up a dairy farm, in addition to the identification of the optimum investment strategy on farm, taking into account the level of risk a farmer is willing to take. This information has been used by researchers, extension agents and incorporated into farmer's expansion and development plans already, but is also of use to those planning further expansion or entering dairy production into the future.
- This research has identified the need for intensive collaboration amongst research and extension agents and farmers to help develop more relevant and readily adoptive farm management technologies. In understanding the processes of technology adoption and incorporating them into the development of management technologies, this research aims to increase technology uptake and improve understanding of key technologies.

Main results:

Identified important challenges for new entrant dairy farms

- Rapidly expanding dairy farms require a significant working capital reserves and necessitates that low capital cost options are used
- Many new dairy entrants are surprised by the immediate and long term impacts of grassland management on animal performance and so learning the key skills to maintain healthy good quality grazing swards is essential.

Opportunity / Benefit:

Results from this project will provide future new entrants with a greater understanding of the challenges associated with developing a new dairy herd.

Collaborating Institutions:

University College Dublin & Allied Irish Banks plc

Teagasc project team: Dr. Brendan Horan (PI)
Aine Macken Walsh
Laurence Shalloo
Roberta McDonald

External collaborators: Mr. John Downey DAFM
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1. Project background:

In advance of EU milk quota abolition in 2015, the Irish Department of Agriculture Food and the Marine (DAFM) initiated a New Entrant Scheme to allocate a small portion of the expanded milk quotas from 2009-2013 to young entrants to dairying. As the first opportunity for new entrants to join the Irish dairy industry since the introduction of quotas in 1984, almost 400 new dairy farmers will have entered the Irish dairy industry as a result of the New Entrant Scheme (NES). This unique group of new dairy producers represent the initial evolution of the dairy industry in Ireland post milk quotas. The aim of this study was to describe the characteristics of new dairy farmers entering dairying in Ireland, with specific emphasis on farmer expectations and the impacts of, and processes underpinning the development of a new dairy farm business, and the farmer who takes on such a transformation. New Entrants who successfully received milk quotas from 2009-2011 were used in this multi-disciplinary study.

2. Questions addressed by the project:

The overall objectives of this thesis were therefore, to analyse and profile new entrant dairy farmers entering the Irish dairy industry through the NES and the farms they intend on developing; to look at the alternative expansion strategies to deliver the utmost from their businesses; to investigate the factors that have motivated these farmers to enter the dairy industry; and to examine the decision-making process of a new entrant farmers in relation to farm management and technology adoption.

3. The experimental studies:

Five experimental areas were investigated within this project namely:

- Characteristics, intentions and expectations of new entrant dairy farmers entering the Irish dairy industry through the New Entrant Scheme
- Evaluating expansion strategies for startup EU dairy farm businesses
- The interplay between farmers and a deregulated dairy regime: insights from Ireland's New Entrants Scheme
- An actor-oriented approach to understanding dairy farming in a liberalised regime: a case study of Ireland's New Entrant Scheme
- Factors influencing new entrant dairy farmer's decision-making process around technology adoption

4. Main results:

- The average new entrant farmer is a young and highly educated male converting from beef and mixed farming enterprise, and with significant land and financial resources readily available to develop and expand their new dairy farms into the future. The investigation of these new dairy farmers indicates that milk quota abolition is likely to result in increased polarisation of milk production within Ireland, with increased intensity of production in traditional milk producing areas in the south.
- A financial modelling evaluation of these new businesses indicates that these new businesses must continue to grow as those who remain static will experience a severe loss in farm profitability over time, largely due to production cost inflation.
- The results of the analysis undertaken indicate that significant cash flow deficits are likely to arise in the early years of a new dairy farm development, regardless of the growth strategy undertaken, and so new dairy farm businesses require a significant cash reserve to alleviate the financial risks to the infant business. The results of this analysis indicate that dairy farm businesses that expand using low cost capital investment and avoid milk superlevy fines can significantly reduce the financial risks associated with expansion.
- The decision made by new dairy farmers to enter dairy farming was examined with particular emphasis on the evidence of entrepreneurial behaviour among new entrants. In the advent of a deregulated dairy production environment, our case-study dairy farmers made a strategic decision to enter dairying, drawing from policy and market related information, their own personal speculations, and conventional wisdom shared with other members of the farming community. Our analysis indicates that among new entrant farmers who have made a significant change to their farming

activities, the influence of family is a key driver behind the decisions to enter dairying in order to improve the family lifestyle and future prospects for successors.

- The entrepreneurial behaviour of these new dairy farmers is further evidenced by the high rate of technological adoption of grazing, AI and financial management technologies in comparison to established dairy farmers. The results of this analysis indicate that new entrant's decision to adopt dairy technologies is motivated by a financial focus and is primarily influenced by the perceived usefulness and ease-of-use of new technologies within these new dairy farm businesses.
- New entrants to dairying have an agricultural education and recognise the capability of AI and grazing technologies to increase farm production and profitability. While the vast majority of new entrants' complete financial accounts, these results indicate that the financial analysis undertaken is rarely used to aid decision-making.

5. Opportunity/Benefit:

As a novel multi-disciplinary study, this project has demonstrated that although new entrant dairy farmers are primarily financially motivated, their behaviours also display strong social influences which further justify the use of a multi-disciplinary methodology to understanding decision-making. The value of social and interactive learning was made evident throughout the study, and informs and encourages research and extension providers to promote peer-to-peer learning. The development of new and diverse methodologies such as participatory group-based action research within research programmes can target the needs of increasingly specialised farming groups and advance the rate of technology adoption and innovation to support increased productivity and profitability at farm level.

6. Dissemination:

International conferences

Presented at many international conferences, invited and contributed, such as the International Farm Management Association, British Society of Animal Science, ICAR.

National Conferences and seminars

Presented at the Agricultural Research Forums through the duration of the project and at national farmer conferences.

Open Day

Presented at all Moorepark open days.

Farmer discussion groups

Discussed at many farmer discussion groups and training seminars for new dairy farmers.

Press

Results regularly presented in the Irish Farmers Journal, Farming independent, Today's Farm, TResearch, and Moorepark News.

Main publications:

McDonald, R., Pierce, K., Fealy, R. & Horan, B. 2013a. Characteristics, intentions and expectations of new entrant dairy farmers entering the Irish dairy industry through the New Entrant Scheme. *International Journal of Agricultural Management*, 2: 4: 189-198.

McDonald, R., Shalloo, L., Pierce, K. M. & Horan, B. 2013b. Evaluating expansion strategies for startup European Union dairy farm businesses. *Journal of Dairy Science*, 96: 6: 4059-4069.

Popular publications:

McDonald, R. and B. Horan. Moorepark Open Day 2011: Planning for 2015. A Profile of New Entrant Dairy Farmers. p.87

McDonald, R., K.M. Pierce, A. Macken-Walsh, K. Heanue R. Fealy, L. Shalloo and B. Horan. T-Research article Winter 2011. Irish Dairy Expansion: The role of new dairy farm businesses. p.26

Shalloo, L., R. McDonald and B. O'Brien. Irish Grassland Association Conference 2012. Milk quota Management and once a day milking. p.56-60

McDonald, R., Pierce, K., Fealy, R., Savage, P. & Horan, B. 2012. Characteristics, intentions and expectations of new entrant dairy farmers entering the Irish dairy industry through the New Entrant Scheme. *Irish Agricultural Research Forum*. Tullamore, Co. Offaly, Ireland: Teagasc. p.50

McDonald, R. 2012. The emergence of New Entrants to the Irish dairy industry. Allied Irish Banks plc (AIB) Agri Matters newsletter. Bankcentre, Ballsbridge, Dublin 4. Summer 2012, p.3

McDonald, R., Pierce, K., Fealy, R., Savage, P. & Horan, B. 2012. Characteristics, intentions and expectations of new entrant dairy farmers entering the Irish dairy industry through the New Entrant Scheme. Proceedings of the ICAR 2012 Conference, 28th May-1st June, Rochestown Park Hotel, Cork, Ireland. p.40

McDonald, R., K. Pierce, K. Heanue, B. Horan, A. Macken-Walsh. 2012. New Dairy 2020: A multi-disciplinary study of technology adoption amongst New Entrants to the Irish dairy industry. Proceedings of Teagasc Best Practice in Extension Services: Supporting Farmer Innovation, Aviva Stadium, Dublin 4. p.49

7. **Compiled by:** Dr Brendan Horan, Research Officer, Animal and Grassland Research and Innovation Centre, Teagasc Moorepark, Fermoy, Co. Cork.
