John & Pat Hume Doctoral Awards 2025-2026

Department: Economics

Supervisor: Dr Bruno Morando

Supervisor Email: bruno.morando@mu.ie

Title of Research Area:

Farmers' ageing and the economic and environmental sustainability of Irish agriculture.

Description of research areas supervisor is willing to accept applications in:

The population of Irish farmers has been ageing at a sustained pace in the last 30 years. In the 1991 agricultural census, 13.2 percent of farmers were below 35, and 23 percent were older than 65. In the most recent census (2020), only 7 percent of the farmers were below 35 and one third were 65 or older. This trend poses some obvious challenges for the financial and environmental sustainability of the sector. For example, older farmers might be more reluctant to introduce innovative technologies to cut emissions or have poorer access to non-family labour to maintain sustainable levels of production.

This study aims to quantify the impact of the population dynamics on the aggregate productivity, efficiency and environmental sustainability of the Irish agricultural sector. Methodologically, this will be achieved employing micro level data from the National Farm Survey (NFS) which contains farm level information on farmers' characteristics, input and technology used as well as output production and GHG emissions.

Since the data is available in its current form since the early 2000s, it can be leveraged to disentangle and quantify different sources of aggregate changes in environmental and efficiency performance linked with ageing. For example, it is possible to study how the relationship between productivity and age evolved over time (e.g. if older farmers in 2020 were relatively more efficient than in 2000) and to which extent the constraints faced by older farmers (for example in selling excess land) changed over the years.

Such study will allow policymakers to target specific challenges identified in the analysis and to make specific evidence-based policy suggestions on the priorities to tackle such as the access to factor markets vs the adoption of new and more environmentally friendly production techniques.

All students interested in the general field of agricultural economics should apply!

How supervisor research areas align to Maynooth University research priority areas:

This project is in line with three of the beacons of research excellence identified in the strategic plan. Namely:

- Data and Digital Transformation
- Society and Public Policy
- Sustainability and Climate Change

More specifically, the objective of the project is to contribute to the development of evidence-based policies to tackle the issue of farmers' ageing which not only has obvious implications in terms of the financial viability of the agricultural sector, but also on its environmental sustainability. The latter is particularly crucial in light of the fact that according to the Environmental Protection Agency (EPA) agriculture contributed to nearly 40% of the total GHG emissions in Ireland, nearly twice the share of transport (the second industry by emission levels).

The methodology will be based on rigorous quantitative methods leveraging existing micro-level data on farmers characteristics, inputs and output use and emissions over the years, and as such will contribute to the development of new and policy relevant data applications.

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