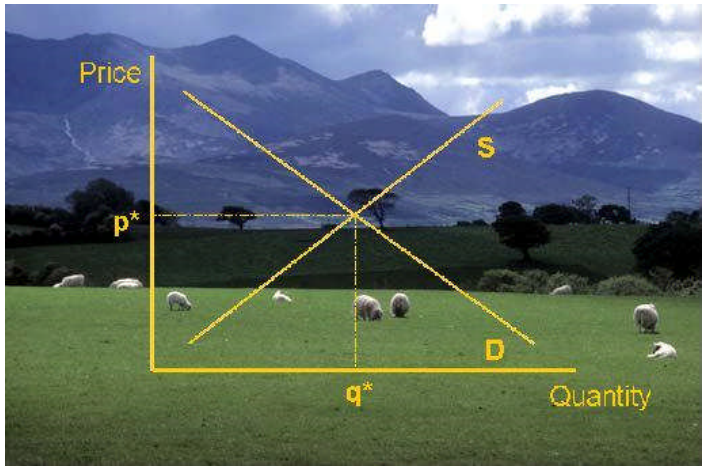
Project number: 6219
Funding source: Teagasc
Date: June, 2015
Project dates: Jan-2012 Dec-2014

AGRI 2025: Economic analysis of Irish agriculture using partial equilibrium models



Key external stakeholders:

Government, Teagasc, State Agencies, Food Industry and Farm Organisations

Practical implications for stakeholders:

The project has provided annual medium projections of the evolution of agricultural activity levels, agricultural commodity supply and use balances, agricultural input and output price levels and the economic accounts for Irish agriculture.

Main results:

The model developed and maintained during the project was used to generate projections of agricultural activity levels, agricultural commodity supply and use balances, agricultural input and output price levels and the economic accounts for agriculture under Baseline and alternative policy scenarios.

The principal alternative policy scenarios evaluated during the project related to the FH output volume and value growth targets set out in the Food Harvest 2020 Report published in June 2010.

Over the course of the project the time horizon of the projections has been extended to 2035.

The agricultural price projections and the agricultural activity level projections provided by the models maintained and developed during this project provide key inputs into related projects on the impact of Irish agriculture on the Environment (REAG 6218) and the FAPRI-Farm level model (REAG 6107).

Opportunity / Benefit:

The Baseline and alternative policy projections provided by the research undertaken have provided key information used in the assessment of progress made towards achieving the targets set out in the Food Harvest 2020 Committee Report. The projections are also a key input into related projects REAG 6218 and 6107.

Collaborating Institutions:

DAFM and FAPRI at the University of Missouri

Contact Kevin Hanrahan Email:kevin.hanrahan@teagasc.ie.

Teagasc project team: Dr. Kevin Hanrahan(PI)
Trevor Donnellan

External collaborators: Ms Sinéad McPhillips, Department of Agriculture, Food and the Marine (DAFM)
Dr Myles Patton, AFBI-Northern Ireland.
Dr Julian Binfield, FAPRI at the University of Missouri, USA

1. Project

This project used a partial equilibrium model of the Irish agricultural sector (The FAPRI-Ireland) models to project the evolution of the levels of Irish agricultural activity, commodity supply and use balances, agricultural input and output price levels and the economic accounts for agriculture for Ireland to a medium term horizon.

The model for Ireland is linked to similar models for the UK (maintained by colleagues at AFBI-NI) and models for the continental EU and global agricultural markets maintained by colleagues at FARI at the University of Missouri.

2. Questions addressed by the project:

The project addresses questions such as:

- What will the level of agricultural activity in Ireland's principal agricultural sectors (dairy, beef, sheep, pigs, poultry and tillage) be in the medium term?
- What prices will Irish farmers receive for the agricultural output produced over the next 10 to 15 years?
- What prices will Irish farmers have to pay for inputs used in the the production of agricultural output?
- What contribution will agriculture make to Irish GDP over the medium term?
- How will dependence on subsidies evolve over the medium term?
- What impact will the ending of the milk quota system have on the aggregate supply of milk in Ireland?

3. The experimental studies:

The projection period of the models developed and maintained in this project has been extended at the request of stakeholders to 2035. Preliminary work required to extend the projection horizon to a long term basis (towards 2050) has begun

The models database is updated on a continuous basis as data on agricultural activity levels, agricultural production, commodity supply and use balances and agricultural prices become available.

On an annual basis medium term projections of agricultural activity levels, agricultural commodity supply and use balances, agricultural prices and the economic accounts for agriculture in Ireland are produced under a no policy change (Baseline) and alternative policy change scenarios.

The development of the Baseline projections for Ireland are integrated into a collaborative process wherein similar projections are developed for EU and global agricultural markets by colleagues at FAPRI-Missouri. Exogenous macroeconomic data used in the generation of projections for Ireland are provided by the Economic and Social Research Institute (ESRI), information on agricultural policy is provided by colleagues in DAFM.

4. Main results:

The Baseline outlook suggests the number of dairy cows and the volume of milk and associated dairy commodities produced sector in Ireland will expand after milk quota elimination. The Irish suckler cow herd is projected to decline in size due to the projected continuing low to negative levels of profitability in the sector. The impact of an expanding dairy cow herd partially offsets the negative impact on beef production of the projected decline in the suckler cow herd.

Over the medium term the evolution of sectoral level income is positive in nominal terms – the expansion of profitably milk production and the contraction of less profitable suckler based beef production – leads to an increase in the level of projected Irish agricultural sector income. With growing agricultural sector income and unchanged subsidy receipts over the medium term the dependence of Irish agriculture on subsidies is projected to decline.

Contact Kevin Hanrahan Email:kevin.hanrahan@teagasc.ie.

5. Opportunity/Benefit:

The work undertaken in the project informs policy makers, farming and food processing industries as to the likely future medium term development of Irish agriculture under a no policy change scenario and through the analysis of alternative policy scenarios has contributed to assessments of progress made towards achieving the Food Harvest 2020 targets for growth in agricultural output volume and value.

6. Dissemination:

Annual reports with detailed information on agricultural projections have been published on an annual basis.
The research undertaken in this project has been presented at national and international conferences and in national reports.

Main publications:

Donnellan, T., Hanrahan, K. and Breen, J. (2014). Development and Application of Economic and Environmental Models of Greenhouse Gas Emissions from Agriculture: Some Difficult Choices for Policy Makers. In: Zopounidis, C., Kalogeras, N., Mattas, K., Dijk, G., Baourakis, G. Agricultural Cooperative Management and Policy: New Robust, Reliable and Coherent Modelling Tools. Switzerland: Springer.

Donnellan T and Hanrahan K. (2013). Greenhouse Gas Emissions by Irish Agriculture: Consequences arising from the Food Harvest Targets. http://www.tnet.teagasc.ie/fapri/downloads/pubs2013/ghgprojections2012.pdf

Donnellan, T, Hanrahan, K., Breen, J.P. and Gillespie, P. (2013) Climate Change and Agricultural Policy Coherence: Agricultural Growth and GHG Emissions in Ireland
http://ageconsearch.umn.edu/bitstream/158853/2/Kevin_Hanrahan_Donnellan_Hanrahan_Breen_gillespie_AES_2013.pdf

Popular publications:

Hanrahan K and T Donnellan (2012) Productivity and Income. T-Research, 7(4):24-25.

7. Compiled by: Kevin Hanrahan

Contact Kevin Hanrahan Email:kevin.hanrahan@teagasc.ie.