New data for new policies

New farm sustainability indicators have been developed by TEAGASC researchers in collaboration with EU counterparts, as part of the EU-funded FLINT project.

A key question facing modern society is whether the agricultural sector can develop in a manner that is sustainable from economic, environmental and social perspectives (the three dimensions of sustainability). Population growth, climate change, energy, water supply and re-emerging diseases all affect the sustainable intensification (SI) of agricultural production across all three dimensions. The objectives and evaluation needs of agricultural policies have evolved considerably since the MacSharry reform of 1992 to the current Common Agricultural Policy (CAP) and Rural Development Programme (RDP), which aim to ensure the sustainability of agriculture and rural areas. As policies change, so too do policy evaluation needs, requiring a broader set of reliable data to assess the impact of current and future policies against these sustainability objectives.

In this context, a multidisciplinary consortium of researchers from Ireland (Teagasc), the Netherlands, France, Greece, Hungary, Poland, Finland, Germany and Spain (Navarra region) came together to assess the feasibility of expanding the scope of data collected by the EU’s Farm Accountancy Data Network (FADN) to better support policy analysis. The primary advantage of using FADN data lies in the harmonised and objective data collection system that operates across the EU and thus facilitates cross-country comparison. The EU FP7 FLINT (Farm Level Indicators for New policy Topics) project devised a set of 33 ‘new’ indicators, which could be used to assess the impact of policy on the economic, environmental and social sustainability performance of farms, using existing FADN data, and supplemented this with a pilot dataset of new indicators (collected on a sample of 1,100 farms across nine member states [MS] for 2015). The sustainability indicators developed were then used to demonstrate the usefulness of the additional data in effective policy analysis. Here we present examples of policy analyses achieved through the collection of this additional FLINT data.

Trade-offs
To better target and evaluate policies, there is a need for data that describe different aspects of environmental, economic and social sustainability on the same farm, and can detect trade-offs or ‘jointness’ between these aspects. Analysis of the FLINT data showed that economic and environmental sustainability can be positively correlated (for some farm systems and some environmental indicators). For example, across all MS, crop farms that performed well economically also performed well environmentally. However, livestock farms that performed well economically tended to produce higher greenhouse gas emissions in absolute terms (per hectare) but often lower emissions on a per product basis, and had a larger nitrogen surplus per hectare. Across all farm types and MS, high economic performance tended to be associated with high social sustainability (Latruffe et al., 2016).

Farm viability
Evaluation of CAP and RDP objectives to improve the viability of farms is challenged by: (a) the lack of data to benchmark the viability of farm households against non-farm households; and, (b) the lack of comparable data and measurement standards across the EU in relation to both farm and non-farm wage thresholds. In general, farms are deemed economically ‘viable’ if family farm income per labour input is greater than a threshold wage, whereas ‘vulnerable’ farms are not economically viable. In practice, many farms across the EU are reliant on off-farm income. The FLINT dataset contains new data on whether the farm household has off-farm income, allowing for the incorporation of a third ‘sustainable’ category (farms that are not viable but the farmer/spouse has off-farm income). Analysis undertaken by O’Donoghue et al. (2016) developed eight different models of viability to reflect the different calculation methodologies and thresholds employed in the surveyed
countries. The level and ranking of the indicators is sensitive to the measurement assumptions employed in the different models. Figure 1 illustrates viability/vulnerability/sustainability indicators for six MS when farm viability is defined as: (family farm income – cost of own capital)/FWU (unpaid labour unit) as paid wages. Although Irish analysis has previously been undertaken using the Teagasc National Farm Survey (NFS), the combination of FLINT and FADN data makes it possible to conduct inter-country comparisons, which illustrate differences in farm and household viability across the EU. This analysis highlights the sensitivity of viability indicator results to measurement choices, which in turn raises the need for standardised data at EU level for future benchmarking of the viability of farms and farm households within wider society.

Extension use
The Teagasc NFS collects data on whether farms engage with extension services. However, FLINT provided additional data on the level of engagement and the type of services required, which shows that in Ireland, Spain and Poland, public extension services provide the most frequent interaction with farming households. In the Netherlands, Greece, Finland and Hungary, private advisory services are most commonly used, reflecting the different policy frameworks across Europe. More importantly from the perspective of policymakers, the analysis undertaken shows that there is a significant and positive difference in economic and social sustainability between users and non-users of extension services, and also between high and low users of extension services (Brennan et al., 2016).

Summary
Policymakers need to evaluate the trade-offs between different policy objectives, e.g., farm income, different environmental impacts and food security (production levels). In addition, concepts like the bio-economy and circular economy will lead to new issues and indicators, while the issue of climate change – adaptation as well as mitigation – and the optimal use of natural resources will play a big role in post-2020 CAP policy evaluation. While the analysis presented here is limited by the pilot nature and sample size of the dataset, the FLINT project demonstrates that it is feasible to collect sustainability data within the FADN infrastructure and that policy evaluation in areas such as cross-compliance, greening, climate change, soil management, water, biodiversity, rural development/quality of life, and innovation can be improved with access to better data, while also providing sustainability credentials for the agri-food sector. The FLINT project also made recommendations on how to adapt the FADN system to support the ongoing need for the common monitoring and evaluation of future EU policies.

Acknowledgements
FLINT was funded under the EU 7th Framework programme. The authors acknowledge Brian Moran and the Teagasc NFS team, who collected and compiled the FLINT data, and Irish FLINT team members Emma Dillon (Teagasc) and Edel Kelly (University College Dublin). For further information on FLINT, see: http://www.flint-fp7.eu/index.html.

Related publications

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