



PAPER 3

The impact of the Water Framework Directive on the economics of Irish farming: A strategy for future research

Cathal O'Donoghue

Rural Economy Research Centre, Teagasc, Athenry, Galway, Ireland.

The Water Framework Directive is a major regulatory reform of water resources management within the European Union. Integrated catchment management plans must be prepared for all river basins, in order to achieve "good ecological status" in all EU waters. However, the benefits of reduced nitrate concentrations in rivers and lakes will come at some cost to farms. In this paper we examine a number of methods of assessing the impact of the WFD on Irish farming. Firstly, we review the literature in relation to existing research on the interaction of water quality and agricultural activity and examine the relevance of previous methodologies used to model the associations between water quality values, agricultural activity and catchment attributes. Secondly, we assess a number of measures proposed to reduce nitrate concentrations in rivers. These include reduced inorganic fertiliser application and reduced livestock stocking rates. For each measure, changes in farm gross margins are estimated using a panel dataset of farms from the National Farm Survey. Thirdly, by combining simulated farm population microdata with spatially referenced ecological status information and urban settlement information within a GIS framework we review catchment urbanisation and agricultural intensity across space. Finally we outline future plans to link the RERC Spatial Microsimulation Model of the Irish Local Economy (SMILE model) and the NCYCLE environmental model (calculates the annual nitrogen transformations, fluxes and losses for cut and grazed grassland at the field scale) developed for Irish conditions in Teagasc, Johnstown Castle. This linkage will facilitate the study of the potential impact of the Water Framework Directive on the characteristics of the natural resource base, the impact on the environment and the impacts on the economic return of the farm operator.