



## **Policy brief No. 3:**

# **Implementation of methodologies for linking farming systems and environmental public goods**

## **Micro level assessment in environmental impact evaluation of Rural Development Programmes**

*The ENVIEVAL project contributes to structure the current knowledge on evaluation methods to assess micro-level environmental performance of Rural Development Programmes (RDP). Only with multi-scale integration and combination of results is it possible to generalise (up-scale) micro-level results efficiently in a macro-level perspective. The logic model should help practitioners (evaluators, managing authorities and monitoring agencies) identify the most appropriate procedure, given the local and policy context, data availability and level of needed expertise.*

### **Context**

Impact assessment methodologies are well established in the scientific literature on agri-environmental policies, both at micro and macro level, considering different public goods (water, biodiversity, etc.) as specific foci of these policies. Deliverable 4.1 contains a critical review of scientific works specifically targeted to assess the environmental impact of policy implementation at micro level. Several challenges and gaps still remain outstanding. They relate to their use by both practitioners and policy makers within EU and its Member States and concern the fitness of indicators, models and methodologies for the expected outcomes and the adoption of the most suitable scale and level for the analysis.

Meetings with stakeholders during the three-year duration of the project helped to identify weaknesses and needs for a better targeting of the current evaluation procedures and to propose possible solutions to improve the effectiveness of impact assessments. There is need for improved clarity in objectives (both of the policy measures and of the evaluation assessment) in a context of considerable variations in practices, relevance and the application of indicators. Insufficient or absent baseline data as well as the lack of appropriate targeting approaches have led to different approaches to reporting, and sometimes to the lack of appropriate impact assessment models.

Under the conceptual framework of the evaluation logic model (see Policy brief no. 1), helping to design consistent evaluation processes, work package WP4 of the ENVIEVAL project contributes to structure the current knowledge on evaluation methods to assess micro-level environmental performance of Rural Development Programmes (RDP). It deals with issues related to the specific use for some methodologies (or models, or indicators) for a single public good and the related, supposed effects of a specific RDP measure. Deliverable 4.2 aims to analyse these data requirements for a set of candidate methods. In order to propose guidelines for the structure of the databases for the case studies from a micro-level perspective. Deliverable 4.3 tries to clarify the role of methodologies and their integration in the evaluation process, particularly to fill the gaps in knowledge of the agriculture-environment relationships within the complexity of multi-scale and multi-levels approaches.

### **Land management activities and environmental impacts at micro level**

From a micro-level perspective, it is important to consider the role of individuals and analyse the different forms of organisation (spatial, networks, hierarchies) and interactions amongst different organisational and intervening levels. Only with multi-scale integration and combination of results is it possible to efficiently generalise (up-scale) micro-level results to a macro-level perspective. Field measurements, farm management surveys and farming system models essentially refer to the farm as the simplest

management unit of an agricultural system, analysed from the point of view of a farmer who decides whether or not to participate in RDPs.

To assess the environmental impacts of farming activities both in quantitative and qualitative terms, with specific reference to the evaluation of policy effects at a micro level, several methodologies, models and indicators have been framed - and tested in case studies - in the logic model. It should help practitioners (evaluators, managing authorities and monitoring agencies) identify the most appropriate procedure, given the local and policy context, data availability and level of required expertise. This guidance can be accessed through the project's dissemination platform in form of the special handbook or descriptive logic model.

### **Lessons learnt**

In most of the case study areas a naïve quantitative analysis has been applied due to difficulties in data availability and data access, with adverse effects from the methodological point of view when statistical significance of the parameters was not able to be verified. The statistics-based approach to counterfactuals needs well-defined samples with a sufficient number of observations to perform regression models and spatial analysis.

The lack of temporally-differentiated participation data and land cover data which are infrequently collected and often out of synchronisation with RDPs are among the main limitations in terms of data requirements which can be limits to assessments. If databases are updated in different time periods, that may cause difficulties in analysis through time.

The limited availability of data on farm structure and practice management did not allow the application of advanced matching techniques to further improve the analysis of causal relationships. However, when information from specific variables is not available, proxy indicators are a cost-effective option. For example, at farm level farming intensity can be easily estimated, whilst for land cover the information on unfarmed features could be replaced by some variables normally included in existing databases.

Only with multi-scale integration and combination of results is it possible to generalise (up-scale) micro-level results efficiently in a macro-level perspective.

Key contributors: Andrea Povellato (CREA-INEA), David Longhitano (CREA-INEA), Valentina Lasorella (CREA-INEA), Zymantas Morkvenas (BEF)

If any questions arise concerning the policy brief, please contact at [zymantas.morkvenas@bef.lt](mailto:zymantas.morkvenas@bef.lt)

### ***What is ENVIEVAL?***

*ENVIEVAL is developing and testing improved tools for the evaluation of environmental impacts of rural development measures and programmes in EU Member States. The project covers a representative set of EU member states, including Germany, Scotland, Greece, Finland, Italy, Lithuania, Hungary and regional case studies in the selected countries.*

*The main innovative aspects of the new methodological frameworks are that they enable the integration of micro- and macro-level evaluations (and their results) and provide guidance on the selection and application of cost-effective evaluation methods to estimate net effects of rural development programmes on the different main public goods from farming and forestry. In addition to the environmental public goods of climate change mitigation, biodiversity, landscapes, water quality and soil quality, the project will pay particular attention to animal welfare and include animal welfare case studies.*

*See the project website ([www.envieval.eu](http://www.envieval.eu)) for additional information and documentation*



This document was produced under the terms and conditions of Grant Agreement No. 312071 for the European Commission. It does not necessarily reflect the view of the European Union and in no way anticipates the Commission's future policy in this area.

