Policy brief No. 5:

Data issues in environmental impact evaluation of RDPs

Data issues are among the top challenges of environmental impact evaluation of rural development programmes as data availability, structure and access restrict the choice of evaluation methods/indicators and hence the robustness of evaluation results. The ENVIEVAL project provides possible solutions for dealing with data gaps and limited access and highlights examples how sample selection issues can be considered through an ad hoc approach.

Context

Data is a fundamental element for evaluation of impacts of the implementation of RDP measures on environmental public goods. The design of the evaluation process is highly dependent on data availability and access. In summary, the amount and quality of data determines the robustness of the evaluation conclusions. Stakeholder surveys, carried out in the ENVIEVAL project, highlighted that data issues greatly affect the choice of evaluation methods/indicators and hence the robustness of evaluation results. But how much data is sufficient to perform a robust evaluation?

No-one doubts the importance and need of good quality data, but this has to be balanced against the reality of institutions faced with limited finances. The ENVIEVAL project, working on the pilot evaluation case studies determined by environmental public goods, examined the challenges of data availability and access.

Data related challenges observed

The results of the case studies highlight the importance of the availability of, and access to, environmental monitoring data in combination with other databases. However, experience reveals substantial gaps in these data, especially for designing robust counterfactual scenarios. In most of the case studies, available data was not sufficient to determine robust non-participant groups.

The following EU databases have been examined for the environmental impact evaluation workflow: Integrated Administration and Control System / Land Parcel Identification System (IACS/ LPIS), Corine Land Cover (CLC), Farm Accountancy Data Network (FADN), Farm structure survey (FSS). Experience of the case study application concludes that IACS database is the central database for the evaluation of rural development measures and programmes, and all case studies used this database. With regard to the spatial and temporal resolution of data, other existing databases did not fit with the unit of analysis applied or the time scale of the evaluation period for the other databases. In most cases, the resolution of the Corine Land Cover data was not sufficient to perform evaluations, especially at micro level. The FADN database, examined through the High Nature Value evaluation case study in Italy, highlighted that a better statistical representativeness would allow for more robust extrapolation from the FADN sample to regional estimations. This would require a larger number of observations to achieve sufficient statistical significance of the estimated parameters and, consequently, this would increase the cost of the analysis. Alternatively, better integration or linking of FADN, FSS and IACS-LPIS databases could lead to a more appropriate georeference basis for, and spatial representativeness of, the farm samples.

In addition to poor data quality and lack of consistency of integration between different databases, a high relevance of data sharing between agricultural and environmental institutions was observed. In some countries, such as Lithuania, such multi-purpose data collection and sharing is still under debate and consideration to be implemented. For example, the national environmental monitoring programme for evaluating the environmental status of the could also be a good data source for environmental RDP evaluations. However, specific data requirements of RDP evaluations such as sufficient coverage of participants and non-participants require methodological adjustments for data collection to enable such multi-purpose use of data.

Lessons learnt

A number of practical solutions to existing data gaps were highlighted in the case study testing in work package WP6.

As already mentioned above, a good solution for insufficient data could be to use that already gathered by environmental authorities in their regular monitoring programmes. In the Lithuanian biodiversity-wildlife public good case study, such an opportunity has been tested by examining a census of corncrake singing males as a proxy indicator. Results of the test provide a good indication that such an indicator could be suitable for impact modelling of the landscape stewardship programme (measure 214). Use of such a **proxy indicator** would bring added value to the biodiversity public good evaluation using the farmland bird index as the main indicator focussed on macro-level assessment. However, for consistent application of corncrake census data as a proxy indicator, some adjustments are needed for the data gathering methodology and issues of **data sharing** between the Ministries of Environment and Agriculture should be resolved.

Application of freely-available data has been examined in the case study focussed on the landscape public good in Greece. As the resolution of the Corine data was not sufficient to identify conventional linear vineyards pruned by traditional techniques, Google Earth images were digitised to create land-cover maps using a relevant classification. Resolution of the Corine data was not sufficient for all the types of land cover in the case study focussed on biodiversity HNV in Italy. As a solution, experts used the Land Cover Map created by the technical service of Regione Veneto instead of Corine data.

Several case studies (e.g. the water quality case study in Germany) explored the **combination and integration of different data sources** (e.g. monitoring data, farm accounting data or control data of the fertiliser ordinance) to create a sufficient number of samples for sound statistical analysis of comparison groups. This has increased the sample size for statistics based assessments of comparison groups. As nutrient balances from different data sources are calculated by different organisations and stakeholders, particular care must be taken in ensuring the comparability and reliability of different data sets.

Strategic sampling could be also an appropriate solution to address data gaps and increase data quality. Early planning of data sampling considering the specific requirements of RDP evaluations would ensure collection of targeted data and therefore substantially increase database quality with a relatively insignificant increase in cost. See also the Policy Brief No. 6 for more information on the cost-effectiveness implications. Time-consuming processes to negotiate access to databases and strict interpretation of data protection laws impacted on the time required for a number of public good case studies and ultimately also on the design of the evaluation approaches tested. Whilst in most cases access to IACS data for evaluators can be assumed, access to aggregated IACS is not sufficient to apply elaborate statistics-based methods to quantify net effects of RD measures and RDPs. In cases where this has been an issue in the past, negotiations to access more detailed IACS data should be started early to account for this time-consuming process. This is critical for the **success of evaluations.**

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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) for additional information and documentation.

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